



**CALL NO. 102**

**CONTRACT ID. 151027**

**JEFFERSON COUNTY**

**FED/STATE PROJECT NUMBER STP 0311 (031)**

**DESCRIPTION DIXIE HIGHWAY(US-31W)**

**WORK TYPE ASPHALT PAVEMENT & ROADWAY REHAB**

**PRIMARY COMPLETION DATE 6/30/2016**

**LETTING DATE: June 26,2015**

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME June 26,2015. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

**PLANS AVAILABLE FOR THIS PROJECT.**

**DBE CERTIFICATION REQUIRED - 4%**

**REQUIRED BID PROPOSAL GUARANTY:** Not less than 5% of the total bid.

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**PART I**

**SCOPE OF WORK**

ADMINISTRATIVE DISTRICT - 05

CONTRACT ID - 151027  
STP 0311 (031)  
COUNTY - JEFFERSON  
PCN - DE056031W2715  
STP 0211 (311)

DIXIE HIGHWAY(US-31W) REMOVE AND REPLACE AC PAVEMENT ON US-31W FROM JUST SOUTH OF GENE SNYDER INTERCHANGE(MP 6.69) TO INTERSECTON OF KY-1931(MP 11.69) IN JEFFERSON COUNTY.ASPHALT PAVEMENT & ROADWAY REHAB SYP NO. 05-02074.00.  
GEOGRAPHIC COORDINATES LATITUDE 38:07:03.00 LONGITUDE 85:51:31.00

COMPLETION DATE(S):  
COMPLETED BY 06/30/2016                      APPLIES TO ENTIRE CONTRACT



## **CONTRACT NOTES**

### **PROPOSAL ADDENDA**

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

### **BID SUBMITTAL**

Bidder must use the Department's Expedite Bidding Program available on the Internet web site of the Department of Highways, Division of Construction Procurement. ([www.transportation.ky.gov/construction-procurement](http://www.transportation.ky.gov/construction-procurement))

The Bidder must download the bid file located on the Bid Express website ([www.bidx.com](http://www.bidx.com)) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

### **JOINT VENTURE BIDDING**

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

### **UNDERGROUND FACILITY DAMAGE PROTECTION**

The contractor is advised that the Underground Facility Damage Protection Act of 1994, became law January 1, 1995. It is the contractor's responsibility to determine the impact of the act regarding this project, and take all steps necessary to be in compliance with the provision of the act.

### **SPECIAL NOTE FOR COMPOSITE OFFSET BLOCKS**

Contrary to the Standard Drawings (2012 edition) the Cabinet will allow 6" composite offset blocks in lieu of wooden offset blocks, except as specified on proprietary end treatments and crash cushions. The composite blocks shall be selected from the Cabinet's List of Approved Materials.

### **REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY**

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by [KRS 14A.9-010](#) to obtain a certificate of authority to transact business in the Commonwealth (“certificate”) from the Secretary of State under [KRS 14A.9-030](#) unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in [KRS 14A.9-010](#), the foreign entity should identify the applicable exception. Foreign entity is defined within [KRS 14A.1-070](#).

**For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity’s solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.**

Businesses can register with the Secretary of State at <https://secure.kentucky.gov/sos/ftbr/welcome.aspx>.

### **SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT**

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by fax (502) 564-7299 or email to [kytc.projectquestions@ky.gov](mailto:kytc.projectquestions@ky.gov). The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading “Questions & Answers” on the Construction Procurement website ([www.transportation.ky.gov/contract](http://www.transportation.ky.gov/contract)). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

### **HARDWOOD REMOVAL RESTRICTIONS**

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer.

Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

### **INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES**

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

### **ACCESS TO RECORDS**

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004. (See attachment)

10/29/12



**Steven L. Beshear**  
Governor

Commonwealth of Kentucky  
Finance and Administration Cabinet  
**OFFICE OF THE SECRETARY**  
Room 383, Capitol Annex  
702 Capital Avenue  
Frankfort, KY 40601-3462  
(502) 564-4240  
Fax (502) 564-6785

**Lori H. Flanery**  
Secretary

## **SECRETARY'S ORDER 11-004**

### **FINANCE AND ADMINISTRATION CABINET**

#### **Vendor Document Disclosure**

**WHEREAS**, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary to conduct a review of the records of a private vendor that holds a contract to provide goods and/or services to the Commonwealth; and

**WHEREAS**, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary during the course of an audit, investigation or any other inquiry by an Executive Branch agency that involves the review of documents; and

**WHEREAS**, KRS 42.014 and KRS 12.270 authorizes the Secretary of the Finance and Administration Cabinet to establish the internal organization and assignment of functions which are not established by statute relating to the Finance and Administration Cabinet; further, KRS Chapter 45A.050 and 45A.230 authorizes the Secretary of the Finance and Administration Cabinet to procure, manage and control all supplies and services that are procured by the Commonwealth and to intervene in controversies among vendors and state agencies; and

**NOW, THEREFORE**, pursuant to the authority vested in me by KRS 42.014, KRS 12.270, KRS 45A.050, and 45A.230, I, Lori H. Flanery, Secretary of the Finance and Administration Cabinet, do hereby order and direct the following:

- I. Upon the request of an Executive Branch agency, the Finance and Administration Cabinet ("FAC") shall formally review any dispute arising where the agency has requested documents from a private vendor that holds a state contract and the vendor has refused access to said documents under a claim that said documents are not directly pertinent or relevant to the agency's inquiry upon which the document request was predicated.
- II. Upon the request of an Executive Branch agency, the FAC shall formally review any situation where the agency has requested documents that the agency deems necessary to

conduct audits, investigations or any other formal inquiry where a dispute has arisen as to what documents are necessary to conclude the inquiry.

- III. Upon receipt of a request by a state agency pursuant to Sections I & II, the FAC shall consider the request from the Executive Branch agency and the position of the vendor or party opposing the disclosure of the documents, applying any and all relevant law to the facts and circumstances of the matter in controversy. After FAC's review is complete, FAC shall issue a Determination which sets out FAC's position as to what documents and/or records, if any, should be disclosed to the requesting agency. The Determination shall be issued within 30 days of receipt of the request from the agency. This time period may be extended for good cause.
- IV. If the Determination concludes that documents are being wrongfully withheld by the private vendor or other party opposing the disclosure from the state agency, the private vendor shall immediately comply with the FAC's Determination. Should the private vendor or other party refuse to comply with FAC's Determination, then the FAC, in concert with the requesting agency, shall effectuate any and all options that it possesses to obtain the documents in question, including, but not limited to, jointly initiating an action in the appropriate court for relief.
- V. Any provisions of any prior Order that conflicts with the provisions of this Order shall be deemed null and void.

### **FEDERAL CONTRACT NOTES**

The Kentucky Department of Highways, in accordance with the Regulations of the United States Department of Transportation 23 CFR 635.112 (h), hereby notifies all bidders that failure by a bidder to comply with all applicable sections of the current Kentucky Standard Specifications, including, but not limited to the following, may result in a bid not being considered responsive and thus not eligible to be considered for award:

102.02 Current Capacity Rating 102.10 Delivery of Proposals  
102.08 Irregular Proposals 102.14 Disqualification of Bidders  
102.09 Proposal Guaranty

### **CIVIL RIGHTS ACT OF 1964**

The Kentucky Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252) and the Regulations of the Federal Department of Transportation (49 C.F.R., Part 21), issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin.

### **NOTICE TO ALL BIDDERS**

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free “hotline” Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report such activities.

The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

### **SECOND TIER SUBCONTRACTS**

Second Tier subcontracts on federally assisted projects shall be permitted. However, in the case of DBE’s, second tier subcontracts will only be permitted where the other subcontractor is also a DBE. All second tier subcontracts shall have the consent of both the Contractor and the Engineer.

### **DISADVANTAGED BUSINESS ENTERPRISE PROGRAM**

It is the policy of the Kentucky Transportation Cabinet (“the Cabinet”) that Disadvantaged Business Enterprises (“DBE”) shall have the opportunity to participate in the performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The contractor will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the contractor to carry out these requirements is a material breach of its contract with the Cabinet, which may result in the termination of the contract or such other remedy as the Cabinet deems necessary.

### **DBE GOAL**

The Disadvantaged Business Enterprise (DBE) goal established for this contract, as listed on the front page of the proposal, is the percentage of the total value of the contract.

The contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in a least the percent of the contract as set forth above as goals for this contract.

### **OBLIGATION OF CONTRACTORS**

Each contractor prequalified to perform work on Cabinet projects shall designate and make known to the Cabinet a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

If a formal goal has not been designated for the contract, all contractors are encouraged to consider DBEs for subcontract work as well as for the supply of material and services needed to perform this work.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

### **CERTIFICATION OF CONTRACT GOAL**

Contractors shall include the following certification in bids for projects for which a DBE goal has been established. BIDS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

“The bidder certifies that it has secured participation by Disadvantaged Business Enterprises (“DBE”) in the amount of \_\_\_\_ percent of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program.”

**The certification statement is located in the electronic bid file. All contractors must certify their DBE participation on that page. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted.**

### **DBE PARTICIPATION PLAN**

Lowest responsive bidders must submit the *DBE Plan/ Subcontractor Request*, form TC 14-35 DBE, within 7 days of the letting. This is necessary before the Awards Committee will review and make a recommendation. **The project will not be considered for award prior to submission and approval of the apparent low bidder’s DBE Plan/Subcontractor Request.**

The DBE Participation Plan shall include the following:

- 1 Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
- 2 Description of the work each is to perform including the work item , unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The Project Code Number (PCN), Category Number, and the Project Line Number can be found in the “material listing” on the Construction Procurement website under the specific letting;
- 3 The dollar value of each proposed DBE subcontract and the percentage of total project contract value this represents. DBE participation may be counted as follows; a) If DBE suppliers and manufactures assume actual and contractual responsibility, the dollar value of materials to be furnished will be counted toward the goal as follows:
  - The entire expenditure paid to a DBE manufacturer;
  - 60 percent of expenditures to DBE suppliers that are not manufacturers provided the supplier is a regular dealer in the product involved. A regular dealer must be engaged in, as its principal business and in its own name, the sale of products to



- the public, maintain an inventory and own and operate distribution equipment;  
and
- The amount of fees or commissions charged by the DBE firms for a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, supplies, delivery of materials and supplies or for furnishing bonds, or insurance, providing such fees or commissions are determined to be reasonable and customary.
- b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;
- c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;
- 4 Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and
- 5 Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

#### **UPON AWARD AND BEFORE A WORK ORDER WILL BE ISSUED**

Contractors must submit the signed subcontract between the contractor and the DBE contractor, the DBE's certificate of insurance, and an affidavit for bidders, offerors, and contractors from the DBE to the Division of Construction Procurement. The affidavit can be found on the Construction Procurement website. If the DBE is a supplier of materials for the project, a signed purchase order and an affidavit for bidders, offerors, and contractors must be submitted to the Division of Construction Procurement.

Changes to DBE Participation Plans must be approved by the Cabinet. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

#### **CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS**

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set and nine (9) copies of this information must be received in the

office of the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

- 1 Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
- 2 Whether the bidder provided solicitations through all reasonable and available means;
- 3 Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
- 4 Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the DBE Liaison in the Office of Minority Affairs to give notification of the bidder's inability to get DBE quotes;
- 5 Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
- 6 Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
- 7 Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
- 8 Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
- 9 Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
- 10 Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the

work requirements of the bid proposal; and

11 Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

### **FAILURE TO MEET GOOD FAITH REQUIREMENT**

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

### **SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT**

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

### **PROMPT PAYMENT**

The prime contractor will be required to pay the DBE within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

### **CONTRACTOR REPORTING**

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to submit certified reports on monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These reports must be submitted within 14 days of payment made to the DBE contractor.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

The Prime Contractor should supply the payment information at the time the DBE is compensated for their work. Form to use is located at:

<http://transportation.ky.gov/Construction/Pages/Subcontracts.aspx>

The prime contractor should notify the KYTC Office of Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact is Melvin Bynes and the telephone number is (502) 564-3601.

Photocopied payments and completed form to be submitted to: Office of Civil Rights and Small Business Development 6<sup>th</sup> Floor West 200 Mero Street Frankfort, KY 40622

### **DEFAULT OR DECERTIFICATION OF THE DBE**

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

04/29/2015

### **TRAINEES**

In Compliance with the "TRAINING SPECIAL PROVISION" included in Part III of the Proposal, the Contractor will be required to employ a trainee(s) for this contract.

### **ASPHALT MIXTURE**

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

### **DGA BASE**

Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

### **DGA BASE FOR SHOULDERS**

Unless otherwise noted, the Department estimates the rate of application for DGA Base for Shoulders to be 115 lbs/sy per inch of depth. The Department will not measure necessary grading and/or shaping of existing shoulders prior to placing of DGA Base, but shall be incidental to the Contract unit price per ton for DGA Base.

Accept payment at the Contract unit price per ton as full compensation for all labor, materials, equipment, and incidentals for grading and/or shaping of existing shoulders and furnishing, placing, and compacting the DGA Base.

### **INCIDENTAL SURFACING**

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

### **ASPHALT PAVEMENT RIDE QUALITY CATEGORY A**

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category A.

### **OPTION A**

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.

**SPECIAL NOTE FOR  
FIXED COMPLETION DATE AND LIQUIDATED DAMAGES  
US 31W (DIXIE HIGHWAY)  
JEFFERSON COUNTY  
ITEM NO. 5-2074.00**

Contrary to Section 108.09, Liquidated Damages of \$25,000 per calendar day will be assessed for each day or fraction thereof work remains uncompleted beyond the specified Fixed Completion Date. This project has a Fixed Completion Date of June 30, 2016.

Per the Maintenance of Traffic plan, the Contractor must return traffic to its normal lane configuration by November 15, 2015 and keep it in that configuration until April 1, 2016. For any day or fraction thereof during this period traffic is not in its normal lane configuration because of the Contractors activities, Liquidated Damages of \$25,000 per calendar day will be assessed.

Liquidated Damages in the following amounts will be charged when a lane closure remains in place past the time specified in the Maintenance of Traffic Notes:

\$2,500 for the first hour or fraction thereof

\$10,000 for any additional hour or fraction thereof with a daily maximum of \$25,000

These hourly disincentives will still be in effect after the Fixed Completion Date and will be charged in addition to the \$25,000 per calendar day, if warranted. These hourly disincentives will also apply to the period between November 15, 2015 and April 1, 2016 if traffic is not in its normal lane configuration in addition to the \$25,000 per calendar day, if warranted.

Contrary to Section 108.09 of the Standard Specifications, these disincentive fees will be charged during those periods when seasonal limitations of the Contract prohibit the Contractor from working on a controlling item or operation. This includes November 15<sup>th</sup> through March 31<sup>st</sup>.

All liquidated damages will be applied cumulatively.

All other applicable portions of Section 108 apply.

**SPECIAL NOTE FOR  
ASPHALT MILLING AND TEXTURING  
US 31W (DIXIE HIGHWAY)  
JEFFERSON COUNTY  
ITEM NO. 5-2074.00**

Begin paving operations within 48 hours of commencement of the asphalt milling operation. Continue paving operations continuously until completed. Do not allow public traffic to drive on the milled surface. If paving operations have not begun within this time period, liquidated damages will be assessed at the rate prescribed by Section 108.09 of the current Standard Specifications until such time as paving operations are begun.

The Contractor is to take possession of all of the millings and recycle the millings or dispose of the millings off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department.

Removal of the existing pavement markers prior to the milling operation is considered incidental to the bid item "Asphalt Pavement Milling and Texturing".

SPECIAL NOTE FOR ASPHALT INTERLAYERS

This project will use multiple products to evaluate their effectiveness in delaying reflective cracking. See project notes and typical sections for existing asphalt removal, full depth repair information, and leveling course details.

The interlayers shall be placed according to the table below:

Section	Begin Station	End Station	Northbound		Southbound	
			Interlayer Product	Aramid Fibers Added (Top Base Lift and Surface)	Interlayer Product	Aramid Fibers Added (Top Base Lift and Surface)
1	98+50	160+00	None	Yes	None	No
2	160+00	202+50	Reflective Crack Relief Interlayer	Yes	Multi-Axial Fiberglass Paving Mat	No
3	202+50	301+00	Reflective Crack Relief Interlayer	No	Multi-Axial Comp Paving Grid	No
4	301+00	360+57	Reflective Crack Relief Interlayer	No	Bi-Axial Comp Paving Grid	No

Aramid Fibers also added to the surface lift of the two-way-left-turning-lane and adjacent 5 foot of left lane in each direction throughout the project limits.

See corresponding special note for details on installing each product. This includes:

- Special Note for Reflective Crack Relief Interlayer
- Special Note for Multi-Axial Fiberglass Paving Mat Interlayer
- Special Note for Multi-Axial Composite Paving Grid Interlayer
- Special Note for Bi-Axial Composite Paving Grid Interlayer
- Special Note for Fiber Reinforcement for HMA

Acceptable products for paving mat and paving grid interlayers are:

- Fiberglass Paving Mat Interlayer
  - TenCate Mirafi® PGM-50 Paving Mat
  - Tensar GlasPave 50 Waterproofing Hybrid Paving Mat
- Multi-Axial Composite paving Grid Interlayer
  - TenCate Mirafi® PGM-G<sup>4</sup> Composite Paving Grid
- Bi-Axial Composite Paving Grid Interlayer
  - Tensar CG100 CompoGrid Pavement Reinforcement & Moisture Barrier System



SPECIAL NOTE FOR REFLECTIVE-CRACK-RELIEF INTERLAYER

PART 1 – GENERAL

1.01 DESCRIPTION

The Reflective-Crack-Relief (RCR) interlayer is a highly elastic, impermeable, asphalt mixture interlayer that is designed to reduce reflective cracking from Portland Cement Concrete (PCC) pavements or asphalt concrete pavements. The RCR asphalt mixture is a fine-graded, polymer-modified hot-mix asphalt (HMA). Place the RCR interlayer directly on the PCC or asphalt pavement in one lift using a conventional paver and roller(s). This material should be applied according to the lines, grades, and typical cross-sections in the plans or as established by the Engineer. Cover the RCR interlayer with an asphalt mixture overlay prior to permitting traffic on the RCR interlayer.

Unless otherwise noted, Section references herein are to the Department’s *Standard Specifications for Road and Bridge Construction, current edition*. All applicable portions of the Department’s *Standard Specifications* apply unless specifically modified herein.

PART 2 – PRODUCT

2.01 MATERIALS

- A. Fine Aggregate. Provide natural sand, crushed fines, or screenings conforming to Section 804 with the exceptions that the minimum sand equivalent requirement is 45 percent, as determined by AASHTO T-176, and the fine aggregate angularity requirement is waived.
- B. RCR Interlayer Binder. Provide a binder conforming to AASHTO M320 with a high temperature of 70 °C or higher as required to meet the Hveem Stability and Flexural Beam Fatigue mix requirements of section 3.4. In addition, ensure the RCR interlayer binder conforms to the following criteria:

<u>Test</u>	<u>Criteria</u>
RTFO Elastic Recovery (AASHTO T301)	45 % minimum at 25 °C
Separation Test (ASTM D5976)	6 °C max. diff. after 48 hours

2.02 PERSONNEL

- A. RCR Interlayer Representative. Ensure a technical representative from the producer of the asphalt binder utilized in the RCR interlayer is present during the initial construction activities and available upon the request of the Engineer.

**PART 3 – EXECUTION**

**3.01 Preparation of Mixture.**

Ensure the mixture contains no recycled asphalt pavement (RAP), or other reclaimed materials. Contrary to Subsection 402.03, formulate and submit a job-mix formula (JMF) conforming to the following asphalt binder content (AC) and gradation limits.

<u>Sieve Size</u>	<u>Percent Passing</u>
3/8 in.	100
No. 4	80-100
No. 8	60-85
No. 16	40-70
No. 30	25-55
No. 50	15-35
No. 100	8-20
No. 200	6.0-14.0
 % AC	 7.5 (minimum)

**3.02 Mix Design Criteria.**

Contrary to Subsection 403.03, using a compaction effort of Ndes = 50 gyrations, perform and submit a laboratory mix design conforming to the following mixture specifications. Additionally, provide results for Hveem Stability according to AASHTO T246 (4-in. molds, 140 °F) and Flexural Beam Fatigue according to AASHTO TP8 [2000 microstrains, 10 Hz, 3.0 ± 1.0 % air voids (AV), 60 °F]. For the Hveem Stability test, condition the mixture at the compaction temperature for two hours according to AASHTO R30. For the Flexural Beam Fatigue test, condition the mixture at 135 °C for three hours and at the compaction temperature for one hour according to AASHTO R30.

<u>Test</u>	<u>Criteria</u>
% AV	0.5-2.5
% Voids-in-Mineral Aggregate (VMA)	16.0 (minimum)
Hveem Stability	18.0 (minimum)
Flexural Beam Fatigue	100,000 cycles (min for avg. of 2 samples)

**3.03 Surface Preparation.**

Immediately prior to applying the RCR interlayer, thoroughly clean the surface of all vegetation, loose materials, dirt, mud, visible moisture, and other objectionable materials. As directed by the Engineer, fill joints larger than 0.5 in. wide with a non-expansive crack filler or silicone joint material that will not be affected by the heat of the RCR interlayer during placement.

Prior to the placement of the RCR interlayer over PCC pavement and as directed by the Engineer, repair any moderately or highly “D-cracked” areas, high-severity “punch-outs,”

“blow-ups,” and other severe distresses with a full depth repair as detailed elsewhere in the plans.

Prior to the placement of the RCR interlayer over asphalt pavement and as directed by the Engineer, fill large surface deformities, greater than nominally 3 in. deep and 4 ft. in diameter, with an approved asphalt mixture. During placement of the RCR interlayer, fill smaller pavement deformities in the underlying pavement with the RCR interlayer mixture.

**3.04 Production and Application of RCR Interlayer.**

Do not place the RCR interlayer on wet pavement. Ensure the pavement surface or ambient air temperature is a minimum of 50 °F and rising at the time of placement.

Apply a tack coat both between the existing pavement and RCR interlayer and between the RCR interlayer and asphalt mixture overlay according to Subsection 406.03.

Contrary to Subsection 401.03, produce and place the RCR interlayer at the following temperatures:

<u>Activity</u>	<u>Temperature</u>
Mixing	300 – 320 °F
Laydown at Paver	280 – 300 °F
Compaction	270 – 290 °F

Place the RCR interlayer at a thickness of 1.0 ± 0.25 in. The interlayer shall overlap the existing longitudinal joints by at least 6 inches to eliminate construction joints over the underlying longitudinal joints.

**3.05 Compaction and Appearance of RCR Interlayer.**

- A. Compaction. Compaction operations shall start promptly after placement of the Reflective Crack Relief bituminous mixture. Only steel wheel rollers shall be used for compaction of the mixture. Static mode is recommended for all compaction. Vibratory compaction may be only used in isolated cases as needed and must be approved by the Engineer before use. Density of the in-place Reflective Crack Relief interlayer shall be 96.0% minimum of the maximum specific gravity as determined by AASHTO T-209, *Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures*. A minimum of three steel wheel rollers is recommended to achieve density.
- B. Test Strip. During the setup period, construct test strips of the RCR interlayer for each approved mix design. Ensure the test strip consists of approximately 250 tons or one hour’s production, whichever is less, in a single lane within the project limits.

Use the paver and rollers to be used on the project to place the test strip. By obtaining and testing roadway cores according to KM 64-442, ensure all test strips meet the density requirements of this note and other applicable specification

requirements. Construct additional test strips until establishing a rolling pattern that provides the specified density.

Construct a new test strip whenever unacceptable density results occur or whenever a change in the mix design, compaction method, or compaction equipment occurs. When directed by the Engineer, remove and replace test strips with unacceptable density results. Do not place additional RCR interlayer before establishing a rolling pattern acceptable to the Engineer on a test strip conforming to the requirements of this note.

- C. Appearance. After final rolling, the Reflective Crack Relief interlayer shall be deep black in appearance. The surface texture should be tight. Occasional small flushed areas approximately 0.6 m (2 feet) wide are normal. Flushing of the entire width of the mat indicates that the mixture is out of specification. The control criteria shall be verified in areas of concern, and areas determined out of specification shall be removed and replaced.
- D. Blisters. Small blisters may occur in the mat after rolling where moisture or crack filler within the PCC or AC exists. If blisters larger than 1 foot in diameter occur and do not disappear by the time of overlay, they shall be punctured and rolled with 1 pass while the mat is greater than 60°C (140°F) as determined by the Engineer. The Reflective Crack Relief interlayer supplier shall be contacted for further guidance.
- E. Unacceptable Appearance. Remove and replace areas determined unacceptable by the Engineer, according to this specification, at no additional cost to the Department.

### **3.06 Application of Asphalt Mixture Overlay.**

The RCR interlayer may be covered with the successive wearing course after the surface temperature cools to less than 150°F. Apply the asphalt mixture overlay within five days after completing the RCR interlayer and prior to permitting traffic on the RCR interlayer.

### **3.07 Acceptance Sampling and Testing.**

Contrary to Subsection 402.03.02, the Department will accept the RCR interlayer as follows.

- A. AC and Gradation. Perform one evaluation per subplot according to Subsection 402.03.02. By the end of the setup period, establish a JMF conforming to the AC and gradation limits from Section 3.1 of this note. The Department will allow the established JMF to vary within the production tolerances from Section 3.1 of this note provided the percent passing each sieve remains within the gradation limits and the AC remains at or above the minimum.
- B. AV and VMA. Prepare and analyze one set of two specimens per subplot according to Subsection 402.03.02. By the end of the setup period, test the RCR interlayer to document that the average AV value of each set of specimens conforms to the limits from Section 3.2 of this note. Likewise, by the end of the setup period, test

the RCR interlayer to document that the average VMA value of each set of specimens is at or above the minimum from Section 3.2 of this note.

- C. Density. For each subplot of production after the setup period, furnish four cores to the Engineer according to Subsection 402.03.02. The Department will test the cores to ensure that the density of each core is a minimum of 96 percent of the Gmm value for that subplot. The recommended method for taking cores is to place paper or gray tape in front of the paver at the location where the core will be taken, to prevent adhesion to the PCC or AC. It is recommended to place ice over the area to be cored. To prevent damage to the cores and density measurement, cores should be handled with care because the interlayer mixture is pliable.
- D. Unsatisfactory Work Based on Laboratory Data. When the AC, gradation, AV, or VMA value from any test after the setup period fails to satisfy the applicable requirements of this note, cease all shipments to the project. Adjust procedures or mixture composition until all properties satisfy the applicable requirements of this note. Document acceptable materials and work before restarting operations.
- E. Verification. Contrary to Subsection 402.03.03, the Department will verify the RCR interlayer as follows. The Department will perform a minimum of one verification test for AC, gradation, AV, and VMA for each lot according to Subsection 402.03.03. Provided the differences between the contractor’s acceptance test and the Department’s verification test are within the tolerances given in Subsection 402.03.03, the Department will accept the RCR interlayer for that lot.

When the differences between the contractor’s acceptance test and the Department’s verification test are not within the tolerances given in Subsection 402.03.03, cease all shipments to the project. Adjust procedures or mixture composition until the differences are within the tolerances given in Subsection 402.03.03. Document compliance with these tolerances before restarting operations.

**PART 4 – MEASUREMENT AND PAYMENT**

The Department will measure the RCR interlayer in tons. The Department will not measure the surface preparation or tack for payment and will consider them incidental to the RCR interlayer.

Contrary to Subsection 402.05, the Department will consider the unit bid price per ton to include all labor, materials, and equipment necessary to complete the work. The Department will make payment for the completed and accepted quantities according to the following bid item.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
21875EN	Reflective Crack Relief Interlayer	Ton

SPECIAL NOTE FOR FIBERGLASS PAVING MAT INTERLAYER

PART 1 – GENERAL

1.01 DESCRIPTION

This Section includes specifications for placing the paving mat at the locations and to the dimensions shown on the Plans and as directed by the Engineer. The paving mat shall be placed on existing asphalt or concrete pavement to be overlaid with either hot mix or warm mix asphalt concrete.

The manufacturer shall provide a certification that the material has been manufactured in the United States.

The installer must provide a project list demonstrating experience in installing products of similar nature, with a project list that will show at minimum, 250,000 square yards of material installation. The list shall include project location /description, type of material and a project contact person.

PART 2 – PRODUCT

2.01 MATERIALS

- A. The paving mat shall be constructed of a non-woven material consisting of at least 60% fiberglass (by weight), the remainder comprised of polyester and binder. The material shall have a minimum average roll value (MARV) unit weight of 3.69 oz/yd<sup>2</sup>. The material shall be resistant to chemicals, mildew and rot, and shall not have any tears or holes that will adversely affect the in-situ performance and physical properties of the material. The paving mat shall meet the following physical requirements:

Table 2.01 A – Paving Mat Nominal Properties

Property	ASTM Test Method	Value
Tensile Strength	ASTM D5035	≥ 325 lbs/in
Elongation at Max Load		< 3.5%
Melting Point	D276	≥ 450 °F
Minimum Asphalt Retention	D6140	≥ 0.10 gal/yd <sup>2</sup>

- B. The paving Mat shall conform to all design and nominal performance properties listed above. All other submittals will be rejected unless received along with independent confirmation of the material values and approved by the Engineer at least 2 weeks prior to construction.

## **2.02 STORAGE**

- A. The paving mat roll shall be wrapped in protective wrapping. A durable label shall be on the outside of the wrapping indicating manufacturer, product name or style number, roll and lot number, and roll dimensions.
- B. The paving mat rolls shall be delivered, stored and handled in a manner to prevent damage. The paving mat rolls shall be inspected for defects and damage after unloading.
- C. The paving mat shall be stored per manufacturer's recommendation- in a dry covered condition free from dust, dirt and moisture. The paving mat rolls shall be stored off the ground, protected from precipitation, ultraviolet radiation, strong chemicals, sparks and flames, temperatures in excess 71 °C (160 °F) and other environmental condition that could cause damage.

## **PART 3 – EXECUTION**

### **3.01 SURFACE PREPARATION**

- A. All areas of base failure shall be removed and replaced as shown in the plans or as approved by the engineer.
- B. Repair all failed pavement areas prior to installation of the paving mat. Fill all cracks ¼" or greater with approved material.
- C. Immediately prior to placement of paving mat, the pavement shall be dry, cleaned of loose and extraneous materials such as, but not limited to, vegetation, sand, dirt, gravel and water.

### **3.02 INSTALLATION**

- A. Over a new asphalt section or where a leveling course has been installed, apply the paving mat in a hot PG graded asphalt binder. Asphalt Emulsion is NOT acceptable for placing paving mat.
- B. Asphalt Binder
  - 1. A hot asphalt binder shall be applied to saturate the paving mat and bond to existing surface and the new overlay. The asphalt binder to be used shall be a PG grade asphalt tack (ex. 64 -XX or higher). Sustained ambient temperatures (above 90°F) may require a stiffer binder gradation like PG70 - 10 or higher to improve set time and reduce risk of mat pick-up under construction traffic.
  - 2. The hot asphalt binder shall be applied at a rate of 0.20 gal./yd<sup>2</sup> on a new HMA leveling surface. On an old smooth surface or a clean fine milled surface apply hot asphalt binder at a rate of 0.22 gal./yd<sup>2</sup> or as recommended

by the paving mat manufacturer, their representative, or as directed by the Engineer.

3. The hot asphalt binder shall be applied by a distributor truck in a smooth uniform manner at a minimum temperature of 325 °F. Spray application shall be four (4) inches wider than width of paving mat on lap side.

C. The paving mat shall be installed with equipment in good working order that is capable of installing the mat without wrinkles or manually as needed and recommended by manufacturer.

1. If manual laydown methods are used, the paving mat shall be unrolled, aligned, and placed in increments as recommended by the paving mat manufacturer. Transverse lapping of the interlayer shall not be within 2 feet of an existing JPC transverse joint.
2. The material shall be placed flat and wrinkle-free. The paving mat installation may require hand brooming as necessary to eliminate ripples that may occur during installation.
3. To ease installations around curves, the paving mat can be placed in shortened lengths by mechanical equipment or by hand.
4. Paving mat shall be lapped two (2) to four (4) inches longitudinally and two (2) to four (4) inches transversely. Transverse laps shall be in the direction of the asphalt concrete overlay placement insuring hot asphalt binder is placed under the overlap.
5. Brooming of paving mat is required to insure adequate adhesion into the hot asphalt binder. If the paving mat wrinkles during installation and the height of the wrinkle is 1 inch or more, the wrinkle shall be cut and lapped in the direction of paving.
6. Turning of construction equipment and other vehicles shall be gradual and kept to a minimum to avoid damage to the paving mat. If excessive heat, overspray, or turning cannot be eliminated then spreading small quantities of HMAC or clean blotting sand may be required onto the paving mat in the affected area. Excess blotting sand shall be removed before installing HMAC over the paving mat.
7. After installing the paving mat, limited construction traffic may drive on the mat. Caution: Parking on the installed paving mat prior to final overlay for extended periods could cause damage to the mat.
8. Wet paving mat should never be installed nor should paving mat be installed onto a wet pavement.



3.03 WORKMANSHIP AND QUALITY CONTROL

A. Paving Mat Installation Quality Control

- 1. Installation shall be in strict compliance with all manufacturer’s installation guidelines and recommendations as determined by the Engineer.
- 2. Hot Asphalt Binder certification: A certification of compliance, from the hot asphalt binder supplier, shall be provided for each load of hot asphalt binder delivered to the jobsite, certifying the type and quality of material delivered. Confirmation shall be provided to the Engineer showing the total quantity of asphalt, at the proper application rate as published by the manufacturer was installed on the project.

PART 4 - MEASUREMENT AND PAYMENT

The paving mat shall be measured and paid for at the contract unit bid price per square yard, and shall include full compensation for furnishing all labor, tools equipment, and incidentals for doing all the work involved in placement of the paving mat.

No direct payment for the hot asphalt binder application placed in accordance with this special note will be made and this work shall be considered incidental to the Fiberglass Paving Mat Interlayer.

The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
00110	Geogrid Reinforcement for Asphalt (Fiberglass Paving Mat)	Square Yard

SPECIAL NOTE FOR MULTI-AXIAL COMPOSITE PAVING GRID INTERLAYER

PART 1 – GENERAL

1.01 DESCRIPTION

This Section includes specifications for placing the composite paving grid at the locations and to the dimensions shown on the Plans and as directed by the Engineer. The composite paving grid shall be placed on existing asphalt or concrete pavement to be overlaid with either hot mix or warm mix asphalt concrete.

The installer must provide a project list demonstrating experience in installing products of similar nature, with a project list that will show at minimum, 250,000 square yards of material installation. The list shall include project location /description, type of material and a project contact person.

PART 2 – PRODUCT

2.01 MATERIALS

- A. Shall be an engineered multi-axial composite paving grid interlayer constructed of uncoated, multi-directional, continuous strand, high strength fiberglass fibers, bound to a carrier that when properly saturated with hot asphalt binder forms a moisture barrier and provides multi-directional tensile conforming to the following test methods and physical properties as shown below in Table 2.01 A

Table 2.01 A – Multi-Axial Composite Paving Grid Nominal Properties  
(Minimum Average Roll Values)

Property	ASTM Test Method	Units	Type I
Tensile Strength @ 0° Tensile Strength @ 90° Tensile Strength @ 45° Tensile Strength @ -45°	D6637	lbs/in (kN/m)	459(80)
Elongation at Max Load		%	< 3.0
Melting Point (glass)	D276	°F (°C )	752° (400°)
Asphalt Retention	D6140	gal/yd² (l/ m²)	.17 (0.8)
Mass per Unit Area	D5261	oz/yd² (g/m²)	18.8 (637)

- B. The paving mat shall conform to all of the design and nominal performance properties listed above. Any submittal that deviates will be rejected unless submitted along with independent confirmation of conformance that is provided and approved by the Engineer at least two weeks prior to construction.
- C. The multi-axial composite paving grid shall be available in roll widths up to 12.5’ to reduce longitudinal joints when installed.

## **2.02 STORAGE**

- A. The paving interlayer rolls shall be protected from dust, dirt and the elements. A durable label, indicating manufacturer, product name or style number, roll and lot number, and roll dimensions shall be attached to each roll.
- B. The paving interlayer rolls shall be delivered, stored, and handled in a manner to prevent damage and shall be inspected for defects and damage prior to use.
- C. The paving interlayer shall be stored as manufacturer recommends: in a dry covered condition, free from dust, dirt, off the ground, protected from precipitation, ultraviolet radiation, strong chemicals, sparks and flames, temperatures in excess 71 °C (160 °F) and other environmental condition that could cause damage.

## **PART 3 – EXECUTION**

### **3.01 SURFACE PREPARATION**

- A. All areas of base failure shall be removed and replaced as shown in the plans or as approved by the engineer.
- B. Repair all failed pavement areas prior to installation of the paving mat. Fill all cracks ¼” or greater with approved material.
- C. Immediately prior to placement of paving mat, the pavement shall be dry, cleaned of loose and extraneous materials such as, but not limited to, vegetation, sand, dirt, gravel and water.

### **3.02 INSTALLATION**

- A. Over a new asphalt section or where a leveling course has been installed, apply the paving interlayer grid in a hot PG graded asphalt binder. Asphalt Emulsion is NOT acceptable for placing paving interlayer due to time delay for it to break and the difficulty in insuring quality as installed. See manufacturer’s installation guidelines for reference.
- B. Asphalt Binder
  - 1. A hot asphalt binder shall be applied to saturate the paving interlayer (min. to be the asphalt retention rate) plus amount needed to bond to existing surface and the new overlay. The asphalt binder to be used shall be PG 64 -XX or higher. Sustained ambient temperatures (above 90°F) may require a stiffer binder gradation like PG70 -XX or higher to improve set time and reduce risk of grid pick-up under construction traffic.
  - 2. The hot asphalt binder shall be applied at a rate of 0.19 gal./yd<sup>2</sup> on a new HMA leveling surface. On an old smooth surface or a clean fine milled surface apply hot asphalt binder at a rate of 0.21 gal./yd<sup>2</sup> or as recommended by the paving interlayer manufacturer or as directed by the Engineer.
  - 3. The hot asphalt binder shall be applied by a distributor truck in a smooth uniform manner at a minimum temperature of 325 °F (163 °C). Spray application shall extend four (4) inches wider than width of paving interlayer on lap side.

- C. The paving interlayer shall be installed with equipment in good working order that is capable of installing the grid without wrinkles or manually as needed and recommended by manufacturer.
1. If manual lay-down methods are used, the composite paving grid shall be unrolled, aligned, and placed in increments of approximately thirty (30) feet or as the Engineer suggest.
  2. The material shall be placed flat and wrinkle-free. The paving interlayer installation may require hand brooming as necessary to eliminate ripples that may occur during installation.
  3. To ease installations around curves, the paving grid can be placed in shortened lengths by mechanical equipment or by hand.
  4. Paving interlayer shall be lapped two (2) to four (4) inches longitudinally and two (2) to four (4) inches transversely. Transverse laps shall be in the direction of the asphalt concrete overlay placement insuring hot asphalt binder is placed under the overlap.
  5. Brooming of paving interlayer is required to insure adequate adhesion into the hot asphalt binder. If the interlayer wrinkles more than 1" height during installation, the wrinkle shall be cut and lapped in the direction of paving.
  6. Paving interlayer to be installed with the glass grid facing down to existing surface.
  7. Turning of construction equipment and other vehicles shall be gradual and kept to a minimum to avoid damage to the paving interlayer. If excessive heat, overspray, or turning cannot be eliminated then spreading small quantities of HMA or clean blotting sand onto the interlayer may be required in the affected area. Excess blotting sand shall be removed before installing HMA over the interlayer.
  8. After installing the paving interlayer, the pavement may be opened to traffic at the contractors/engineers discretion. Caution: Parking on the installed paving grid prior to final overlay for extended periods could cause damage to the grid.
  9. Paving interlayer should never be installed when it or the pavement surface is wet.

### **3.03 WORKMANSHIP AND QUALITY CONTROL**

#### **A. Paving Interlayer Installation Quality Control**

1. The project engineer shall confirm the proper installation of the paving interlayer by, at their discretion: 1. Self-inspecting. 2. Requesting the interlayer Manufacturer's Technical Representative be present and/or 3. Using an independent 3rd party, approved by the project engineer to inspect installation and paid for by the Contractor.
2. The installing contractor shall give sufficient notice of planned work schedule such that proper inspection of workmanship is accomplished.
3. A certification of compliance from the binder supplier shall be provided for each load of hot asphalt binder delivered to the jobsite, showing the type and quality of material delivered.
4. Installing contractor shall provide satisfactory confirmation to the Engineer showing the total quantity of asphalt binder was installed, at the proper application rate as published by

the manufacturer on the entire project. Suggest weight tickets just prior to arrival to and exit from jobsite from an independent weight station.

- 5. Hot asphalt binder application rate shall not be reduced without Engineer approval.

**PART 4 - MEASUREMENT AND PAYMENT**

The Department will measure the quantity of Multi-Axial Composite Paving Grid Interlayer in square yards. The Department will not measure providing the paving grid’s manufacturer’s representative for payment and will consider it incidental to the paving grid. Payment for this grid shall be measured and paid for at the contract unit bid price per square yard, and shall include full compensation for furnishing all labor, tools, equipment, and incidentals for doing all the work involved in placement of the paving grid interlayer.

No direct payment for the hot asphalt binder application placed in accordance with this special note will be made and this work shall be considered incidental to the Multi-Axial Composite Paving Grid Interlayer.

The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
00110	Geogrid Reinforcement for Asphalt (Multi-Axial Comp Paving Grid)	Square Yard

SPECIAL NOTE FOR BI-AXIAL COMPOSITE PAVING GRID INTERLAYER

PART 1 – GENERAL

1.01 DESCRIPTION

This Section includes specifications for placing the composite paving grid at the locations and to the dimensions shown on the Plans and as directed by the Engineer. The composite paving grid shall be placed on existing asphalt or concrete pavement to be overlaid with either hot mix or warm mix asphalt concrete.

PART 2 – PRODUCT

2.01 MATERIALS

- A. Shall be a bi-axial composite paving grid interlayer consisting of a fiberglass grid and a non-woven paving fabric that acts as a moisture barrier.

Table 2.01 A – Bi-Axial Composite Paving Grid Nominal Properties

Mechanical Properties & Product Data (All Values are Minimum Average Roll Values)		
Property	Test Method	Composite Grid Requirements
Grid	–	Fiberglass Reinforcement Coated with an Elastomeric Polymer
Grid Tensile Strength Component Strand Strength	ASTM D 4595	Across Width 560 lbs/in. (100 kN/m)
		Across Length 560 lbs/in. (100 kN/m)
Grid – Maximum Elongation at Break	ASTM D 4595	< 5%
Grid – Minimum Melting Point	ASTM D 276	> 425°F (218°C)
Grid Aperture Size (CL to CL)	–	1 in. x 1 in. (25 mm x 25 mm)
Non-Woven Fabric – Polymer	–	Polypropylene
Non-Woven Fabric – Weight	ASTM D 3776	3.6 oz/yd <sup>2</sup> (122 g/m <sup>2</sup> )
Non-Woven Fabric – Grab Tensile Strength	ASTM D 4632	90 lbs (0.40 kN )
Non-Woven Fabric – Maximum Elongation	ASTM D 4632	50%
Non-Woven Fabric – Asphalt Retention	–	0.2 gal/yd <sup>2</sup> (0.9 litres/m <sup>2</sup> )

- B. The paving mat shall conform to all of the design and nominal performance properties listed above. Any submittal that deviates will be rejected unless submitted along with independent confirmation of conformance that is provided and approved by the Engineer at least two weeks prior to construction.

## **2.02 STORAGE**

- A. The paving interlayer rolls shall be protected from dust, dirt and the elements. A durable label, indicating manufacturer, product name or style number, roll and lot number, and roll dimensions shall be attached to each roll.
- B. The paving interlayer rolls shall be delivered, stored, and handled in a manner to prevent damage and shall be inspected for defects and damage prior to use.
- C. The paving interlayer shall be stored as manufacturer recommends: in a dry covered condition, free from dust, dirt, off the ground, protected from precipitation, ultraviolet radiation, strong chemicals, sparks and flames, temperatures in excess 71 °C (160 °F) and other environmental condition that could cause damage.

## **PART 3 – EXECUTION**

### **3.01 SURFACE PREPARATION**

- A. All areas of base failure shall be removed and replaced as shown in the plans or as approved by the engineer.
- B. Repair all failed pavement areas prior to installation of the paving mat. Fill all cracks ¼” or greater with approved material.
- C. Immediately prior to placement of paving mat, the pavement shall be dry, cleaned of loose and extraneous materials such as, but not limited to, vegetation, sand, dirt, gravel and water.

### **3.02 INSTALLATION**

- A. Over a new asphalt section or where a leveling course has been installed, apply the paving interlayer grid in a hot PG graded asphalt binder. Asphalt Emulsion is NOT acceptable for placing paving interlayer due to time delay for it to break and the difficulty in insuring quality as installed. See manufacturer’s installation guidelines for reference.
- B. Asphalt Cement Tack Coat
  - 1. Apply uniformly at a residual rate of 0.25 gal/yd<sup>2</sup> using a calibrated distributor truck.
  - 2. The tack coat area must be a minimum of 3 inches wider than the composite system.
- C. The paving interlayer shall be installed with equipment in good working order that is capable of installing the grid without wrinkles or manually as needed and recommended by manufacturer.
  - 1. Place the composite grid material while the tack coat is still tacky. Use a mechanical placement tractor or place manually.
  - 2. Keep the material flat and wrinkle-free. Installations may require brooming. For sharp curves, cut the edges of the interlayer and fold over in the direction of placement of the asphalt overlay.

- 3. The fabric side of the bi-axial interlayer must face downward.
- 4. Overlaps must be a minimum of 1 inch to ensure a continuous moisture barrier is created on underlying pavement.

D. Hot Mix Overlay

- 1. The composite grid must be paved over on the day of placement. In the event of rain, the material must be sufficiently dry to resume paving. Warm mix will not be accepted for paving over the grid.

3.03 WORKMANSHIP AND QUALITY CONTROL

A. Paving Interlayer Installation Quality Control

- 1. The project engineer shall confirm the proper installation of the paving interlayer by, at their discretion: 1. Self-inspecting. 2. Requesting the interlayer Manufacturer’s Technical Representative be present and/or 3. Using an independent 3rd party, approved by the project engineer to inspect installation and paid for by the Contractor.
- 2. The installing contractor shall give sufficient notice of planned work schedule such that proper inspection of workmanship is accomplished.

PART 4 - MEASUREMENT AND PAYMENT

The Department will measure the quantity of Bi-Axial Composite Paving Grid Interlayer in square yards. The Department will not measure providing the paving grid’s manufacturer’s representative for payment and will consider it incidental to the paving grid. Payment for this grid shall be measured and paid for at the contract unit bid price per square yard, and shall include full compensation for furnishing all labor, tools, equipment, and incidentals for doing all the work involved in placement of the paving grid interlayer.

No direct payment for the tack coat application placed in accordance with this special note will be made and this work shall be considered incidental to the Bi-Axial Composite Paving Grid Interlayer.

The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
00110	Geogrid Reinforcement for Asphalt (Bi-Axial Comp Paving Grid)	Square Yard



SPECIAL NOTE FOR FIBER REINFORCEMENT FOR HMA

PART 1 – GENERAL

1.01 DESCRIPTION

This Section includes specifications for adding aramid fiber reinforcements to hot mix asphalt.

1.02 DEFINITIONS

- A. HMA - hot mix asphalt, without aramid fiber.
- B. Reinforced HMA - hot mix asphalt including aramid fibers properly proportioned, uniformly mixed and coated with asphalt.
- C. Aramid fiber - pure aramid fiber meeting the material properties of this specification, without additive materials.
- D. Delivery material(s) - the material(s) combined with the pure aramid fiber to facilitate Aramid fiber and HMA proportioning, uniform mixing with the HMA, and asphalt coating of the aramid fibers.
- E. Aramid product - the aramid supplier’s mixture of pure aramid fiber and delivery material(s).
- F. Manufacturer - the company that produces the aramid fiber from raw materials.
- G. Supplier - the company that offers an aramid product.

1.03 REFERENCES

- A. ASTM D2172, Standard Test Methods for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures.
- B. ASTM D6931, Standard Test Method for Indirect Tensile (IDT) Strength of Bituminous Mixtures.
- C. AASHTO T322, Determining the Creep Compliance and Strength of Hot-Mix Asphalt (HMA) Using the Indirect Tensile Test Device.

PART 2 – PRODUCT

2.01 MATERIALS

Meet the following aramid fiber properties.

Property	Measure	Standard
Material	Aramid	ASTM D276
Form	Monofilament fibers	Manufacturer Certification
Length	0.75 inches (+/- 10%)	Manufacturer Certification
Specific Gravity	1.44	ASTM D276
Minimum Tensile Strength	400,000 psi	ASTM D3379
Maximum Tensile Elongation	1.8 %	ASTM D3379
Degradation Temperature	800 degrees F	ASTM D276
Acid and Alkali Resistance	Inert	Manufacturer Certification

Polyolefin or polypropylene fibers or bags are prohibited from inclusion in the HMA.

**2.02 SUBMITTALS**

Submit the following.

- A. Identify the mixing plant.
- B. Provide a specification sheet from the aramid fiber manufacturer.
- C. Provide the following from the aramid product supplier at least three weeks prior to HMA production.
  - 1. The supplier’s specified mix rate for the aramid product.
  - 2. Certification that the amount of aramid fiber in the aramid product will be between 2.1 and 4.0 ounces of pure aramid fiber for each ton of hot mix asphalt.
  - 3. Evidence showing how many times, if any, the supplier’s fiber product has been successfully produced at the asphalt plant to be used for the project.
  - 4. Proven method of introducing the aramid fibers into the hot mix asphalt which will not cause the aramid fibers to become airborne.

**2.03 JOB MIX FORMULA**

When aramid fiber is required as a mixture ingredient, modification to the job mix formula is not required.

**PART 3 – EXECUTION**

**3.01 CONSTRUCTION REQUIREMENTS**

Store aramid product in a dry environment and do not allow them to be in contact with moisture.

Mix 2.2 ounces of aramid per ton of asphalt. At no time should less than 2.1 ounces, or more than 4 ounces be mixed.

Have a fiber supplier’s representative on site during the first day of production mixing. This requirement can be waived if fiber supplier and HMA producer can supply evidence of supplier’s brand of fiber product being successfully produced by the HMA producer.

Introduce the aramid product as follows:

- 1. Batch Plant

When a batch type plant is used, add the aramid product dosage to the aggregate in the weigh hopper. This may be done with loose fibers and a fiber metering device, or may be done by using manual dosing equipment. If necessary, increase the batch dry mixing time to ensure the aramid fibers are uniformly distributed prior to the injection of asphalt cement into the mixer.
- 2. Drum Plant

When a continuous or drier-drum type plant is used, add the aramid product to the RAP material to uniformly disperse with the aggregate and injected asphalt.

Use a separate aramid product metering device feed system to proportion by weight of total mix, the required percentage of fiber reinforcement into the mixture. Control the aramid product metering system with a proportioning device to meet the dosing requirements.

When a continuous or drier-drum type plant is used for limited production volumes, the addition of the aramid product may be done by using manual measuring tools or equipment and adding them directly onto the RAP belt or into the RAP opening on the plant. Because this is not an automated process, a written protocol must be supplied by the producer to demonstrate how they will attain the dosage requirement, and documentation must be supplied by the material manufacturer assuring this method will produce the desired uniform aramid fiber distribution.

Mix the aramid fiber with the aggregate longer, if needed, to allow thorough distribution of aramid fibers at the end of the mixing process and to promote asphalt coating of individual strands of aramid fiber. At the start of any fiber mixing, visually observe the reinforced HMA at the plant and in first three trucks at the point of discharge and prior to delivery to the job site. Observation shall include using a shovel or other device. Look for proper distribution of aramid fibers and make mixing adjustments if needed.

**3.02 ACCEPTANCE**

- A. Acceptance of the reinforced HMA will include the following factors:
- 1. Aramid fiber is properly proportioned based on documentation comparing fiber feed to HMA mix production.
  - 2. By visual inspection at the end of the mixing process, there is no clumping of aramid fiber or aramid product and the aramid fibers are uniformly distributed.
  - 3. All other mixture and density requirement of the asphalt as detailed in the Standard Specifications, current edition, shall apply.

**PART 4 - MEASUREMENT AND PAYMENT**

The Department will measure the quantity of Fiber Reinforcement for HMA as ton of asphalt placed with fibers. Each ton of asphalt placed with the aramid fibers according to this special note will be measured and paid for at the contract unit bid price per ton, and shall include full compensation for furnishing all labor, tools, equipment, and incidentals for doing all the work involved in adding the fibers to HMA.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24785EC	Fiber Reinforcement for HMA	Tons

### **SPECIAL NOTE FOR HOT MIX ASPHALT**

Contrary to the standard specifications, hot mix asphalt will be required on all mainline pavements for this project. Warm mix asphalt will not be accepted for any mainline pavement.

**SPECIAL NOTE FOR INLAID PAVEMENT MARKERS**

**I. DESCRIPTION**

Except as provided herein, perform all work in accordance with the Department's Standard and Supplemental Specifications and applicable Standard and Sepia Drawings, current editions. Article references are to the Standard Specifications. This work shall consist of:

- (1) Maintain and Control Traffic; and (2) Furnish and install Inlaid Pavement Markers (IPMs) in recessed grooves; and (3) Any other work as specified by these notes and the Contract.

**II. MATERIALS**

The Department will sample all materials in accordance with the Department's Sampling Manual. Make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Markers.** Provide reflective lenses with depth control breakaway positioning tabs. Before furnishing the markers, provide to the Engineer the manufacturer's current recommendations for adhesives and installation procedures. Use one brand and design throughout the project. Use markers meeting the specifications in the table below.

SPECIFICATIONS FOR HOUSING AND REFLECTOR	
Material:	Polycarbonate Plastic
Weight:	Housing 2.00 oz.
	Reflector 2.00oz.
Housing Size:	5.00" x 3.00" x 0.70" high
Specific Intensity of Reflectivity at 0.2° Observation Angle	
White:	3.0 at 0°entrance angle
	1.2 at 20°entrance angle
Yellow:	60% of white values
Red:	25% of white values

**C. Adhesives.** Use adhesives that conform to the manufacturer's recommendations.

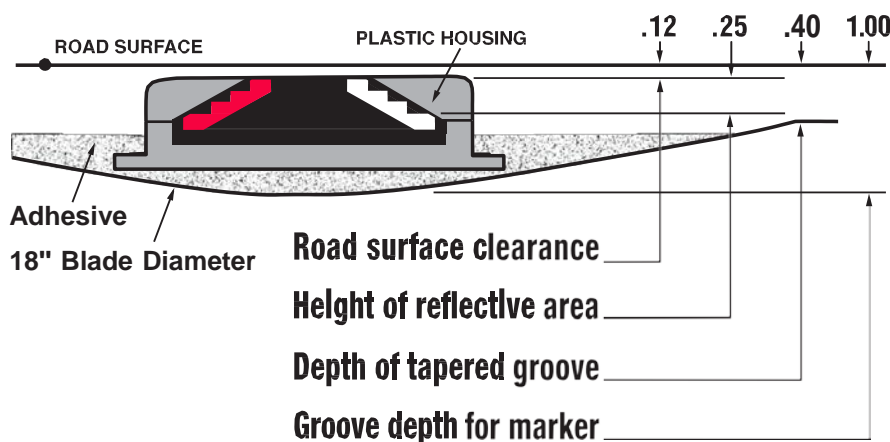
### III. CONSTRUCTION

**A. Experimental Evaluation.** The University of Kentucky Transportation Center will be evaluating this installation of IPMs. Notify the Engineer a minimum of 14 calendar days prior to beginning work. The Engineer will coordinate the University's activities with the Contractor's work.

**B. Maintain and Control Traffic.** See Traffic Control Plan.

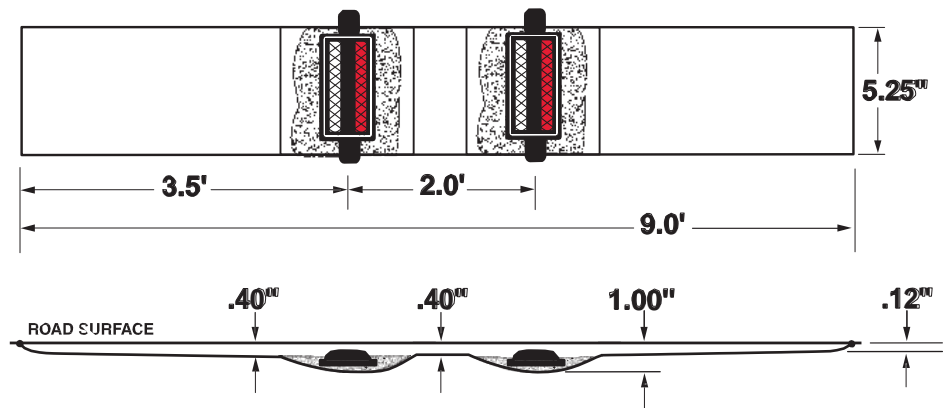
**C. Installation.** Install IPMs in recessed grooves cut into the final course of asphalt pavement according to the manufacturer's recommendations. Do not cut the grooves until the pavement has cured sufficiently to prevent tearing or raveling. Cut installation grooves using diamond blades on saws that accurately control groove dimensions. Remove all dirt, grease, oil, loose or unsound layers, and any other material from the marker area which would reduce the bond of the adhesive. Maintain pavement surfaces in a clean condition until placing markers.

Prepare the pavement surfaces, and install the markers in the recessed groove according to the drawing below. Use an approved snowplowable epoxy adhesive. Ensure that the adhesive bed area is equal to the bottom area of the marker, and apply adhesive in sufficient quantity to force excess out around the entire perimeter of the marker. Use materials, equipment, and construction procedures that ensure proper adhesion of the markers to the pavement surface according to the manufacturer's recommendations. Remove all excess adhesive from in front of the reflective faces. If any adhesive or foreign matter cannot be removed from the reflective faces, or if any marker fails to properly adhere to the pavement surface, remove and replace the marker at no additional cost to the Department.



**D. Location and Spacing.** Install the markers in the pattern for high reflectivity with two (2) IPMs per groove. Locate and space markers as shown in the current standard drawings or sepias (note: use Inlaid Pavement Markers wherever Type V Pavement Markers are called for). Do not install markers on bridge decks. Do not install a marker

on top of a pavement joint or crack. Offset the recessed groove a minimum of 2 inches from any longitudinal pavement joint or crack and at least one inch from the painted stripe, ensuring that the finished line of markers is straight with minimal lateral deviation. Give preference to maintaining the 2-inch offset between recessed groove and joint as opposed to keeping the line of markers straight.



Place inlaid markers as much in line with existing pavement striping as possible. Place markers installed along an edge line or channelizing line so that the near edge of the plastic housing is no more than one inch from the near edge of the line. Place markers installed along a lane line between and in line with the dashes. Do not place markers over the lines except where the lines deviate visibly from their correct alignment, and then only after obtaining the Engineer’s prior approval of the location.

If conflicts between recessed groove placement in relation to pavement joint and striping cannot be resolved, obtain the Engineer’s approval to eliminate the marker or revise the alignment.

**E. Disposal of Waste.** Dispose of all removed asphalt pavement, debris, and other waste at sites off the right of way obtained by the Contractor at no additional cost to the Department. See Special Note for waste and Borrow.

**F. Restoration.** Be responsible for all damage to public and/or private property resulting from the work. Restore all damaged features in like kind materials and design at no additional cost to the Department.

**G. On-Site Inspection.** Make a thorough inspection of the site prior to submitting a bid and be thoroughly familiar with existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid as evidence of this inspection having been made and will not honor any claims for money or grant Contract time extensions resulting from site conditions.

**H. Caution.** Do not take information shown on the drawings and in this proposal and the types and quantities of work listed as an accurate or complete evaluation of the

material and conditions to be encountered during construction, but consider the types and quantities of work listed as approximate only. The bidder must draw his own conclusion as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation or extension of Contract time if the conditions encountered are not in accordance with the information shown.

#### **IV. MEASUREMENT**

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. “INLAID PAYMENT MARKER”** shall be measured as each. One (1) installation of “INLAID PAVEMENT MARKER” will consist of grooving the pavement, removing asphalt cuttings and debris, preheating pavement to remove moisture, adhesives, and installation of two (2) markers with all lenses in accordance with this note.

**Note: Each pay item of Inlaid Pavement Marker will require two markers.**

#### **V. PAYMENT**

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Inlaid Pavement Markers.** The Department will make payment for the completed and accepted quantity of completely installed “INLAID PAVEMENT MARKERS” at the Contract unit price, each. Accept payment as full compensation for all labor, equipment, materials, and incidentals to accomplish this work to the satisfaction of the Engineer. A system of one (1) groove and two (2) markers shall be paid as one “INLAID PAVEMENT MARKER”. The bid item “INLAID PAVEMENT MARKER” shall be used regardless of the color and type of lenses required.



## **SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS**

This Special Note will apply when indicated on the plans or in the proposal.

**1.0 DESCRIPTION.** Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

## **2.0 MATERIALS.**

**2.1 General.** Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

**2.2 Sign and Controls.** All signs must:

- 1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
- 2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
- 3) Provide a controller consisting of:
  - a) Keyboard or keypad.
  - b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
  - c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
  - d) Logic circuitry to control the sequence of messages and flash rate.
- 4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
- 5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
- 6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
- 7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
- 8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
- 9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
- 10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
- 11) Provide a photocell control to provide automatic dimming.

- 12) Allow an on-off flashing sequence at an adjustable rate.
- 13) Provide a sight to aim the message.
- 14) Provide a LED display color of approximately 590 nm amber.
- 15) Provide a controller that is password protected.
- 16) Provide a security device that prevents unauthorized individuals from accessing the controller.
- 17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

/KEEP/RIGHT/⇒⇒⇒/	/MIN/SPEED/**MPH/
/KEEP/LEFT/⇐⇐⇐/	/ICY/BRIDGE/AHEAD/ /ONE
/LOOSE/GRAVEL/AHEAD/	LANE/BRIDGE/AHEAD/
/RD WORK/NEXT/**MILES/	/ROUGH/ROAD/AHEAD/
/TWO WAY/TRAFFIC/AHEAD/	/MERGING/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/	/NEXT/***/MILES/
/REDUCE/SPEED/**MPH/	/HEAVY/TRAFFIC/AHEAD/
/BRIDGE/WORK/***() FT/	/SPEED/LIMIT/**MPH/
/MAX/SPEED/**MPH/	/BUMP/AHEAD/
/SURVEY/PARTY/AHEAD/	/TWO/WAY/TRAFFIC/

\*Insert numerals as directed by the Engineer.  
Add other messages during the project when required by the Engineer.

2.3 Power.

- 1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

**3.0 CONSTRUCTION.** Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

**4.0 MEASUREMENT.** The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

**5.0 PAYMENT.** The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

**SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE**

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

2.2.1 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

2.2.2 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

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Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ° F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.
5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

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Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 ° F (Pa•s)			3.0-3.4	2.5-2.9	2.0-2.4	≤1.9
ASTM D 3236	4.0-10.0	3.5-10.5	10.6-11.0	11.1-11.5	11.6-12.0	≥ 12.1
Cone Penetration, 77 ° F			54-56	51-53	48-50	≤ 47
ASTM D 5329	60-100	57-103	104-106	107-109	110-112	≥ 113
Flow, 140 ° F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 ° F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 ° F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, ° F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code  
20071EC

Pay Item  
Joint Adhesive

Pay Unit  
Linear Foot

May 7, 2014

Contract Id: \_\_\_\_\_ Contractor: \_\_\_\_\_

Section Engineer: \_\_\_\_\_ District & County: \_\_\_\_\_

DESCRIPTION	UNIT	QTY LEAVING PROJECT	QTY RECEIVED@BB YARD
GUARDRAIL (Includes End treatments & crash cushions)	LF	_____	_____
STEEL POSTS	EACH	_____	_____
STEEL BLOCKS	EACH	_____	_____
WOOD OFFSET BLOCKS	EACH	_____	_____
BACK UP PLATES	EACH	_____	_____
CRASH CUSHION	EACH	_____	_____
NUTS, BOLTS, WASHERS	BAG/BCKT	_____	_____
DAMAGED RAIL TO MAINT. FACILITY	LF	_____	_____
DAMAGED POSTS TO MAINT. FACILITY	EACH	_____	_____

**\*Required Signatures before Leaving Project Site**

Printed Section Engineer’s Representative\_\_\_\_\_ & Date\_\_\_\_\_

Signature Section Engineer’s Representative\_\_\_\_\_ & Date\_\_\_\_\_

Printed Contractor’s Representative\_\_\_\_\_ & Date\_\_\_\_\_

Signature Contractor’s Representative\_\_\_\_\_ & Date\_\_\_\_\_

**\*Required Signatures after Arrival at Bailey Bridge Yard (All material on truck must be counted & the quantity received column completed before signatures)**

Printed Bailey Bridge Yard Representative\_\_\_\_\_ & Date\_\_\_\_\_

Signature Bailey Bridge Yard Representative\_\_\_\_\_ & Date\_\_\_\_\_

Printed Contractor’s Representative\_\_\_\_\_ & Date\_\_\_\_\_

Signature Contractor’s Representative\_\_\_\_\_ & Date\_\_\_\_\_

\*\*Payment for the bid item remove guardrail will be based upon the quantities shown in the Bailey Bridge Yard received column. Payment will not be made for guardrail removal until the guardrail verification sheets are electronically submitted to the Section Engineer by the Bailey Bridge Yard Representative.

**SPECIAL NOTE FOR SIDEWALK RAMPS & DETECTABLE WARNINGS**

**GENERAL**

Unless otherwise stated in the contract, or as directed by or with prior approval from the Engineer, construct Sidewalk Ramps and Detectable Warnings in accordance with Section 505; Supplemental Specifications, Standard Drawings RPM-150-07, RPM-152-07, RPM-170-08, RPM-172-05, and RGX-040-02, current editions, as applicable. Saw cut existing sidewalks, curb and gutter, and pavement, if present, as shown on the detail and reconstruct sidewalk ramps with detectable warnings as directed or approved by the Engineer. Unless specified otherwise in the Contract, construct sidewalk with 4” nominal minimum required thickness; however, if the existing sidewalk thickness is found to be greater or less than the thickness specified, transition the thickness as directed by the Engineer.

Except as required by the work, do not disturb drainage pipe, catch basins, and other roadway features, appurtenances and installations. Restore any roadway features, appurtenances, and installations damaged by the work in like kind materials and design at no additional cost to the Department. Dispose of all waste off the right of way at sites obtained by the Contractor at no additional cost to the Department (see Special Note for Waste and Borrow).

**MEASUREMENT & PAYMENT**

**SIDEWALK RAMPS** – Sidewalk ramps shall be paid per Sq Yd of 4” Concrete Sidewalk as per Standard Drawing RPM-170-08. Contrary to the standard drawing, not all sidewalk ramps will require a detectable warning. See the Sidewalk Summary for locations of detectable warnings.

**DETECTABLE WARNINGS** - The Department will measure and make payment for Detectable Warnings in accordance with Section 505 and Standard Drawing RGX-040-02, current editions.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
23158ES505	Detectable Warnings	SQ FT



**SPECIAL NOTE FOR:  
K.P.D.E.S. PERMIT & TEMPORARY EROSION CONTROL  
ITEM NO. 5-2074.00 - JEFFERSON COUNTY**

The Contractor shall be responsible for filing the Kentucky Pollution Discharge Elimination System (KPDES) KYR10 permit Notice of Intent (NOI) with the Kentucky Division of Water (DOW) and any KPDES local Municipal Separate Storm Sewer System (MS4) program that has jurisdiction. The NOI shall name the contractor as the Facility Operator and include the KYTC Contract ID Number (CID) for reference.

The Contractor shall perform all temporary erosion/sediment control functions including: providing a Best Management Practice (BMP) Plan, conducting required inspections, modifying the BMP plan documents as construction progresses and documenting the installation and maintenance of BMPs in conformance with the KPDES KYR10 permit effective on August 1, 2009 or a permit re-issued to replace that KYR10 permit. This work shall be conducted in conformance with the requirements of Section 213 of KYTC 2012 Department of Highways, Standard Specifications for Road and Bridge Construction.

Contrary to Section 213.03.03, paragraph 2, the Engineer shall conduct inspections as needed to verify compliance with Section 213 of KYTC 2012 Department of Highways, Standard Specifications for Road and Bridge Construction. The Engineer's inspections shall be performed a minimum of once per month and within seven days after a storm of ½ inch or greater. Copies of the Engineer's inspections shall not be provided to the contractor unless improvements to the BMP's are required. The contractor shall initiate corrective action within 24 hours of any reported deficiency and complete the work within 5 days. The Engineer shall use Form TC 63-61 A for this report. Inspections performed by the Engineer do not relieve the Contractor of any responsibility for compliance with the KPDES permit.

Contrary to Section 213.05, bid items for temporary BMPs will not be listed and will be replaced with one lump sum item for the services. Payment will be pro-rated based on the Project Schedule as submitted by the Contractor and as agreed to by the Engineer.

The contractor shall be responsible for applying "good engineering practices" as required by the KPDES permit. The contractor may use any temporary BMPs with the approval of the KYTC Engineer.

The contractor shall provide the Engineer copies of all documents required by the KPDES permit at the time they are prepared.

The contractor shall be responsible for the examination of the soils to be encountered and make his own independent determination of the temporary BMPs that will be required to accomplish effective erosion prevention and sediment control.

The Contractor shall be responsible for filing the KPDES permit Notice of Termination (NOT) with the Kentucky DOW and any local MS4 program that has jurisdiction. The NOT shall be filed after the Engineer agrees that the project is stabilized or the project has been formally accepted.

**Payment:** Payment will be by lump sum under the bid item "K.P.D.E.S. Permit & Temporary Erosion Control".

## **USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS**

The following policy is based upon current Changeable Message Signs (CMS) standards and practice from many sources, including the Federal Highway Administration (FHWA), other State Departments of Transportation, and Traffic Safety Associations. It is understood that each CMS installation or use requires individual consideration due to the specific location or purpose. However, there will be elements that are constant in nearly all applications. Accordingly these recommended guidelines bring a level of uniformity, while still being open to regional experience and engineering judgment.

### **Application**

The primary purpose of CMS is to advise the driver of unexpected traffic and routing situations. Examples of applications where CMS can be effective include:

- Closures (road, lane, bridge, ramp, shoulder, interstate)
- Changes in alignment or surface conditions
- Significant delays, congestion
- Construction/maintenance activities (delays, future activities)
- Detours/alternative routes
- Special events with traffic and safety implications
- Crash/incidents
- Vehicle restrictions (width, height, weight, flammable)
- Advance notice of new traffic control devices
- Real-time traffic conditions (must be kept up to date)
- Weather /driving conditions, environmental conditions, Roadway Weather Information Systems
- Emergency Situations
- Referral to Highway Advisory Radio (if available)
- Messages as approved by the County Engineer's Office

### **CMS should not be used for:**

- Replacement of static signs (e.g. road work ahead), regulatory signage (e.g. speed limits), pavement markings, standard traffic control devices, conventional warning or guide signs.
- Replacement of lighted arrow board
- Advertising (Don't advertise the event unless clarifying "action" to be taken by driver – e.g. Speedway traffic next exit)
- Generic messages
- Test messages (portable signs only)
- Describe recurrent congestion (e.g. rush hour)
- Public service announcements (not traffic related)

### **Messages**

Basic principles that are important to providing proper messages and insuring the proper operation of a CMS are:

- Visible for at least ½ mile under ideal daytime and nighttime conditions
- Legible from all lanes a minimum of 650 feet
- Entire message readable twice while traveling at the posted speed

- Nor more than two message panels should be used (three panels may be used on roadways where vehicles are traveling less than 45 mph). A panel is the message that fits on the face of the sign without flipping or scrolling.
- Each panel should convey a single thought; short and concise
- Do not use two unrelated panels on a sign
- Do not use the sign for two unrelated messages
- Should not scroll text horizontally or vertically
- Should not contain both the words left and right
- Use standardized abbreviations and messages
- Should be accurate and timely
- Avoid filler/unnecessary words and periods (hazardous, a, an, the)
- Avoid use of speed limits
- Use words (not numbers) for dates

**Placement**

Placement of the CMS is important to insure that the signs is visible to the driver and provides ample time to take any necessary action. Some of the following principles may only be applicable to controlled access roadways. The basic principles of placement for a CMS are:

- When 2 signs are needed, place on same side of roadway and at least 1,000 feet apart
- Place behind semi-rigid/rigid protection (guardrail, barrier) or outside of the clear zone
- Place 1,000 feet in advance of work zone; at least one mile ahead of decision point
- Normally place on right side of roadway; but should be placed closest to the affected lane so that either side is acceptable
- Signs should not be dual mounted (one on each side of roadway facing same direction)
- Point trailer hitch downstream
- Secure to immovable object to prevent thief (if necessary)
- Do not place in sags or just beyond crest
- Check for reflection of sun to prevent the blinding of motorist
- Should be turned ~3 degrees outward from perpendicular to the edge of pavement
- Bottom of sign should be 7 feet above the elevation of edge of roadway
- Should be removed when not in use

**Standard Abbreviations**

The following is a list of standard abbreviations to be used on CMS.

<b><u>Word</u></b>	<b><u>Abbrev.</u></b>	<b><u>Example</u></b>
Access	ACCS	ACCIDENT AHEAD/USE ACCS RD NEXT RIGHT
Alternate	ALT	ACCIDENT AHEAD/USE ALT RTE NEXT RIGHT
Avenue	AVE	FIFTH AVE CLOSED/DETOUR NEXT LEFT
Blocked	BLKD	FIFTH AVE BLKD/MERGE LEFT
Boulevard	BLVD	MAIN BLVD CLOSED/USE ALT RTE
Bridge	BRDG	SMITH BRDG CLOSED/USE ALT RTE
Cardinal Directions	N, S, E, W	N I75 CLOSED/ DETOUR EXIT 30
Center	CNTR	CNTR LANE CLOSED/MERGE LEFT

Commercial	COMM	OVRSZ COMM VEH/USE I275
Condition	COND	ICY COND POSSIBLE
Congested	CONG	HVY CONG NEXT 3 MI
Construction	CONST	CONST WORK AHEAD/EXPECT DELAYS
Downtown	DWNTN	DWNTN TRAF USE EX 40
Eastbound	E-BND	E-BND I64 CLOSED/DETOUR EXIT 20
Emergency	EMER	EMER VEH AHEAD/PREPARE TO STOP
Entrance, Enter	EX, EXT	DWNTN TRAF USE EX 40
Expressway	EXPWY	WTRSN EXPWY CLOSED/DETOUR EXIT 10
Freeway	FRWY, FWY	GN SYNDR FWY CLOSED/DETOUR EXIT 15
Hazardous Materials	HAZMAT	HAZMAT IN ROADWAY/ALL TRAF EXIT 25
Highway	HWY	ACCIDENT ON AA HWY/EXPECT DELAYS
Hour	HR	ACCIDENT ON AA HWY/2 HR DELAY
Information	INFO	TRAF INFO TUNE TO 1240 AM
Interstate	I	E-BND I64 CLOSED/DETOUR EXIT 20
Lane	LN	LN CLOSED/MERGE LEFT
Left	LFT	LANE CLOSED/MERGE LFT
Local	LOC	LOC TRAF USE ALT RTE
Maintenance	MAINT	MAINT WRK ON BRDG/SLOW
Major	MAJ	MAJ DELWAYS I75/USE ALT RTE
Mile	MI	ACCIDENT 3 MI AHEAD/ USE ALT RTE
Minor	MNR	ACCIDENT 3 MI MNR DELAY
Minutes	MIN	ACCIDENT 3 MI/30 MIN DELAY
Northbound	N-BND	N-BND I75 CLOSED/ DETOUR EXIT 50
Oversized	OVRSZ	OVRSZ COMM VEH/USE I275 NEXT RIGHT
Parking	PKING	EVENT PKING NEXT RGT
Parkway	PKWY	CUM PKWAY TRAF/DETOUR EXIT 60
Prepare	PREP	ACCIDENT 3 MIL/PREP TO STOP
Right	RGT	EVENT PKING NEXT RGT
Road	RD	HAZMAT IN RD/ALL TRAF EXIT 25
Roadwork	RDWK	RDWK NEXT 4 MI/POSSIBLE DELAYS
Route	RTE	MAJ DELAYS I75/USE ALT RTE
Shoulder	SHLDR	SHLDR CLOSED NEXT 5 MI
Slippery	SLIP	SLIP COND POSSIBLE/ SLOW SPD
Southbound	S-BND	S-BND I75 CLOSED/DETOUR EXIT 50
Speed	SPD	SLIP COND POSSIBLE/ SLOW SPD
Street	ST	MAIN ST CLOSED/USE ALT RTE
Traffic	TRAF	CUM PKWAY TRAF/DETOUR EXIT 60
Vehicle	VEH	OVRSZ COMM VEH/USE I275 NEXT RIGHT
Westbound	W-BND	W-BND I64 CLOSED/DETOUR EXIT 50
Work	WRK	CONST WRK 2MI/ POSSIBLE DELAYS

Certain abbreviations are prone to inviting confusion because another word is abbreviated or could be abbreviated in the same way. DO NO USE THESE ABBREVIATIONS.

<u>Abbrev.</u>	<u>Intended Word</u>	<u>Word Erroneously Given</u>
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (merge)

LOC	Local	Location
LT	Light (traffic)	Left
PARK	Parking	Park
POLL	Pollution (index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
TEMP	Temporary	Temperature
WRNG	Warning	Wrong

TYPICAL MESSAGES

The following is a list of typical messages used on CMS. The list consists of the reason or problem that you want the driver to be aware of and the action that you want the driver to take.

<u>Reason/Problem</u>	Action
ACCIDENT	ALL TRAFFIC EXIT RT
ACCIDENT/XX MILES	AVOID DELAY USE XX
XX ROAD CLOSED	CONSIDER ALT ROUTE
XX EXIT CLOSED	DETOUR
BRIDGE CLOSED	DETOUR XX MILES
BRIDGE/(SLIPPERY, ICE, ETC.)	DO NOT PASS
CENTER/LANE/CLOSED	EXPECT DELAYS
DELAY(S), MAJOR/DELAYS	FOLLOW ALT ROUTE
DEBRIS AHEAD	KEEP LEFT
DENSE FOG	KEEP RIGHT
DISABLED/VEHICLE	MERGE XX MILES
EMER/VEHICLES/ONLY	MERGE LEFT
EVENT PARKING	MERGE RIGHT
EXIT XX CLOSED	ONE-WAY TRAFFIC
FLAGGER XX MILES	PASS TO LEFT
FOG XX MILES	PASS TO RIGHT
FREEWAY CLOSED	PREPARE TO STOP
FRESH OIL	REDUCE SPEED
HAZMAT SPILL	SLOW
ICE	SLOW DOWN
INCIDENT AHEAD	STAY IN LANE
LANES (NARROW, SHIFT, MERGE, ETC.)	STOP AHEAD
LEFT LANE CLOSED	STOP XX MILES
LEFT LANE NARROWS	TUNE RADIO 1610 AM
LEFT 2 LANES CLOSED	USE NN ROAD
LEFT SHOULDER CLOSED	USE CENTER LANE
LOOSE GRAVEL	USE DETOUR ROUTE
MEDIAN WORK XX MILES	USE LEFT TURN LANE
MOVING WORK ZONE, WORKERS IN ROADWAY	USE NEXT EXIT
NEXT EXIT CLOSED	USE RIGHT LANE
NO OVERSIZED LOADS	WATCH FOR FLAGGER
NO PASSING	

NO SHOULDER  
ONE LANE BRIDGE  
PEOPLE CROSSING  
RAMP CLOSED  
RAMP (SLIPPERY, ICE, ETC.)  
RIGHT LANE CLOSED  
RIGHT LANE NARROWS  
RIGHT SHOULDER CLOSED  
ROAD CLOSED  
ROAD CLOSED XX MILES  
ROAD (SLIPPERY, ICE, ETC.)  
ROAD WORK  
ROAD WORK (OR CONSTRUCTION) (TONIGHT, TODAY, TOMORROW, DATE)  
ROAD WORK XX MILES  
SHOULDER (SLIPPERY, ICE, SOFT, BLOCKED, ETC.)  
NEW SIGNAL XX MILES  
SLOW 1 (OR 2) - WAY TRAFFIC  
SOFT SHOULDER  
STALLED VEHICLES AHEAD  
TRAFFIC BACKUP  
TRAFFIC SLOWS  
TRUCK CROSSING  
TRUCKS ENTERING  
TOW TRUCK AHEAD  
UNEVEN LANES  
WATER ON ROAD  
WET PAINT  
WORK ZONE XX MILES  
WORKERS AHEAD

1/16/10

use and placement of changeable message signs.docx

### **SPECIAL PROVISION FOR WASTE AND BORROW SITES**

The contractor is advised that it is their responsibility to gain U.S. Army Corp of Engineer's approval before utilizing a waste or borrow site that involves "Waters of the United States". "Waters of the United States" are defined as perennial or intermittent streams, ponds or wetlands. Ephemeral streams are also considered jurisdictional waters, and are typically dry except during rainfall, but have a defined drainage channel. Questions concerning any potential impacts to "Waters..." should be brought to the attention of the appropriate District Office for the Corps of Engineers for a determination, prior to disturbance. Any fees associated with obtaining approval from the U.S. Army Corp of Engineer or other appropriate regulatory agencies for waste and borrow sites is the responsibility of the contractor.

01/01/2009

### **SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS**

The dimensions shown on the typical sections for pavement and shoulder widths are nominal or typical dimensions. The actual dimensions to be constructed or diamond ground may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or shoulders be widened unless specified elsewhere in the Proposal.



**SPECIAL NOTES FOR UTILITY CLEARANCE**  
**IMPACT ON CONSTRUCTION**

JEFFERSON, STP 0311 (031)  
FD52 056 031W 003-012  
US 31W- DIXIE HIGHWAY – PAVEMENT REHABILITATION  
ITEM # 5-2074.00

*Utility coordination efforts conducted by the project sponsor have determined that no significant utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.*

**SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES**

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate activities. The contractor will coordinate activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor’s responsibility to verify all utilities and their respective locations before excavating.

**BEFORE YOU DIG**

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

***Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.***

**SPECIAL NOTES FOR UTILITY CLEARANCE**  
**IMPACT ON CONSTRUCTION**

**JEFFERSON, STP 0311 (031)**  
**FD52 056 031W 003-012**  
**US 31W- DIXIE HIGHWAY – PAVEMENT REHABILITATION**  
**ITEM # 5-2074.00**

**AREA UTILITIES CONTACT LIST AS PROVIDED BY KY 811**

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
LG&E KU (Electric)	Greg Geiser	(502) 627-3708
LG&E (Gas)	Greg Geiser	(502) 627-3708
Louisville Water Company	Daniel Tegene, PE	(502) 569-3649
AT&T KY	Morgan Herndon	(502) 458-7312
Time Warner Cable Company	Deno Barbour	(502) 664-7395 <a href="mailto:Dwight.Barbour@TWCable.com">Dwight.Barbour@TWCable.com</a>
	Nathen Howerton	(502) 639-6838 <a href="mailto:Nathen.Howerton@TWCable.com">Nathen.Howerton@TWCable.com</a>
	James Galvin	(270) 765-1818 <a href="mailto:James.galvin@windstream.com">James.galvin@windstream.com</a>
Windstream	Bruce Babbit	(270) 765-1803
	(Send to both contacts)	
	Brandon Flaherty	<a href="mailto:Brandon.Flaherty@LouisvilleMSD.org">Brandon.Flaherty@LouisvilleMSD.org</a>
Indiana Utilities Corporation	Jackie Rogers	(812) 738-3235 <a href="mailto:JackieR@IndianaUtilitiesCorp.com">JackieR@IndianaUtilitiesCorp.com</a>
Level 3 Communications	Tim Boykin	(720) 888-7280 <a href="mailto:Tim.Boykin@Level3.com">Tim.Boykin@Level3.com</a>

## **SPECIAL NOTE FOR CLEARING VEGETATION FROM RIGHT OF WAY**

### **NO TREE CUTTING WILL BE ALLOWED DURING JUNE 1 TO AUGUST 15.**

This work includes the removal of all trees, brush, and limbs from 1.8 acres of right-of-way of the Department of Highways in the Audubon Parkway and Pennyryle Parkway interchange as shown in the Proposal.

Comply with all applicable federal, state, and local laws, ordinances and regulations governing safety. Provide all safeguards needed for employees and equipment. All equipment is to conform to all prevailing Occupational Safety and Health Administration (OSHA) regulations. The use of a Slope Mower (Over/Guardrail Mower) mounted on a tractor or other similar vehicle with an articulated arm attachment to trim brush on this project will not be allowed. Require all operators and other employees to wear safety vests and personal protective equipment that conform to OSHA regulations on the job site at all times.

The Department will not measure the herbicide treatment of cut stumps, nor the cleanup and removal of debris and wood waste, and will consider these items incidental to the Removal of Trees and Brush item of work.

Work on this project is as follows: (1) Cut and remove **all** trees and brush located in the **3** areas shown on plan sheets in the Proposal; (2) Treat all cut stumps to prevent re-sprouting; (3) Cleanup and remove all debris, produced by cutting operation, from the rights-of-ways; (4) Maintain and control traffic; and (5) All other work specified by this contract.

Complete the work in a continuous manner once work has begun. Cut trees and brush as close to the ground as possible, three inches (3") or less from ground line. Treat all stumps with the herbicide solution, as specified below.

Perform the work under the supervision of an individual who has a minimum of three (3) years experience in trimming and removal of trees and brush. Perform the work in accordance with ANSI A 300-1995, "Tree Care Operations - Tree, Shrub, and Other Woody Plant Maintenance Practices," and as approved by the Engineer.

Remove all debris and biomass from the removal of trees and brush from the work site and dispose of such debris off the right-of-way in accordance with local, state, and federal solid waste laws and regulations. Cleanup and remove all existing down trees and brush located within the designated areas.

Keep the work zone free of accumulated waste material and debris at all times. Remove and dispose of all tree and brush chips off the right-of-way. Remove and dispose of all debris and waste material off the right-of-way as work is completed and at the end of each workday. Remove desirable wood pieces from the rights-of-way at the end of each workday. Stockpile trees and brush off the right-of-way.

Perform stump treatment of all cut stumps as **incidental** to the tree and brush removal item. Apply a stump treatment mix consisting of twenty percent (20%) Garlon 4 Ultra (EPA Reg. No. 62719-527); three percent (3%) Stalker (EPA Reg. No. 241-398); and seventy-seven percent (77%) Basal Oil (100% aliphatic hydrocarbon oils, surfactants, and emulsifiers), or equal. Generic formulations are not acceptable. Mix the herbicide solution in the presence of the Engineer. Include a color indicator in the herbicide solution to mark the treated stumps. **Spray or paint the herbicide solution onto all cut stumps within one hour after cutting.** Apply the herbicide solution in a manner to avoid drift onto surrounding vegetative ground cover.

Provide herbicide material for the treatment of cut stumps meeting the following criteria:

Garlon 4 Ultra

Active ingredient: **(Triclopyr)**

3,5,6- trichloro-2-pyridinyloxyacetic, butoxyethyl ester .....	60.45%
Inert ingredients .....	39.55%
Total .....	100.0%
Acid equivalent: triclopyr – 43.46% - 4 lb/gal	
EPA Reg. No. 62719-527	

Stalker

Active ingredient: **(Imazapyr)**

Isopropylamine salt of Imazapyr 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)*.....	27.6%
Inert ingredients.....	72.4%
Total.....	100%

\*Equivalent to 22.6 percent 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazolyl]-3-pyridinecarboxylic acid or 2 pounds per gallon.

EPA Reg. No. 241-398

Basal Oil

Aliphatic hydrocarbon oils, surfactants, and selected emulsifiers .....	100%
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Provide individuals to apply pesticides to Kentucky Highway Rights-of-Ways who are certified as Pesticide Applicators under Category 6 guidelines. Comply with all current laws and regulations established by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and by KRS 217B that regulate the handling, use, and application of pesticides.

If required, maintain and control traffic for a lane closure on a multi-lane divided highway facility for tree, brush, and limb removal by establishing a Work Zone in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) (Current Edition), and in accordance with the Kentucky Department of Highways Standard Drawings (Current Edition). Utilize the appropriate standard drawings for any maintain and control traffic case scenarios that may occur during the performance of Tree and Brush Removal Operations.

The Maintain and Control Traffic items of work will be performed as **incidental** to the Trim and Remove Tree and Brush item of work. No trimming of trees will be required for this project.

This work will be paid for as Item No. 23020EN Trim and Remove Trees and Brush by the acre and includes all materials and labor required to complete the work described in this note.

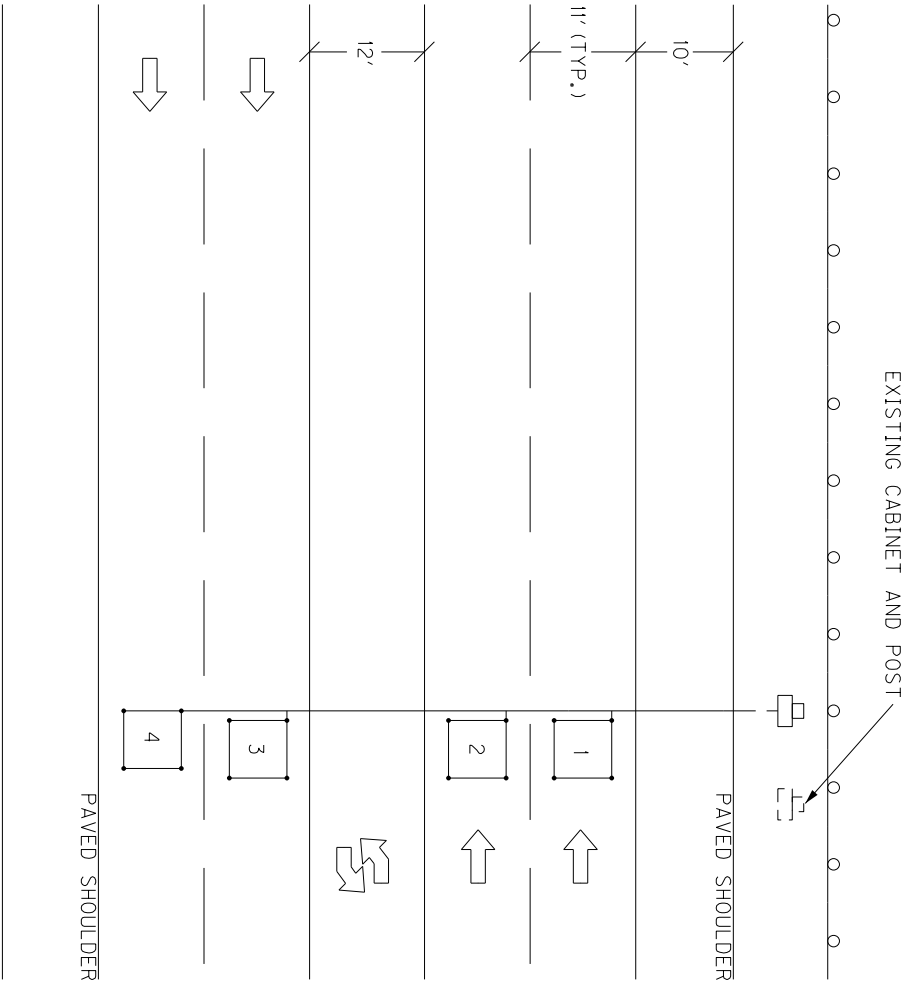
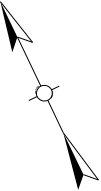
Permanent Traffic Data Acquisition Station  
Estimate Of Quantities

Revised March, 2012

**PERMANENT TRAFFIC DATA ACQUISITION STATIONS**  
**ESTIMATE OF QUANTITIES**

Bid Item Code	Description	Unit	Quantity
2562	SIGNS	SQ FT	
2650	MAINTAIN AND CONTROL TRAFFIC	LP SUM	
2775	FLASHING ARROW	EACH	
4791	CONDUIT ¾ INCH	LIN FT	
4793	CONDUIT 1 ¼ INCH	LIN FT	45
4795	CONDUIT 2 INCH	LIN FT	10
4810	JUNCTION BOX	EACH	
4811	JUNCTION BOX TYPE B	EACH	
4820	TRENCHING AND BACKFILLING	LIN FT	45
4821	OPEN CUT ROADWAY	LIN FT	
4829	PIEZOELECTRIC SENSOR	EACH	4
4830	LOOP WIRE	LIN FT	3000
4850	CABLE NO. 14/1 PAIR	LIN FT	
4871	POLE – 35’ WOODEN	EACH	
4895	LOOP SAW SLOT AND FILL	LIN FT	550
4899	ELECTRICAL SERVICE	EACH	
4901	TELEPHONE SERVICE	EACH	
20213EC	INSTALL PAD MOUNT ENCLOSURE	EACH	
20359EC	GALV STEEL CABINET	EACH	1
20360ES818	WOOD POST	EACH	3
20391ES835	JUNCTION BOX TYPE A	EACH	1
20392ES835	JUNCTION BOX TYPE C	EACH	
20468EC	JUNCTION BOX 10x8x4	EACH	1
21543EN	BORE AND JACK PIPE – 2 IN	LIN FT	
23206EC	INSTALL CONTROLLER CABINET	EACH	

JEFFERSON CO. US 31W m.p. 8.59  
STATION 680



SITE LOCATION IS APPROXIMATE AND WILL BE DETERMINED IN THE FIELD AND APPROVED BY DIVISION OF PLANNING PERSONNEL PRIOR TO ANY CONSTRUCTION.

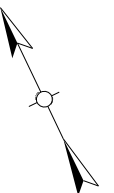
LOOPS SHALL BE 6'X6' SQUARE AND INSTALLED SPLICE-FREE TO 10"x8"x4" BOX. A MINIMUM OF 2' OF WIRE FOR EACH LOOP SHALL BE COILED AND LABELED INSIDE THE BOX. DIVISION OF PLANNING PERSONNEL WILL CONNECT THE LOOPS INSIDE THE BOX.

INSTALL ONE (1) 10"x8"x4" BOX MOUNTED TO ONE (1) 4"x4" WOOD POST.

INSTALL ONE (1) 1 1/4" CONDUIT FROM SAW SLOT TO BOX.

REMOVE EXISTING TRAFFIC DATA COLLECTION EQUIPMENT AND DISPOSE OF OFF THE PROJECT.

JEFFERSON CO. US 31W m.p. 10.85  
STATION 651



SITE LOCATION IS APPROXIMATE AND WILL BE DETERMINED IN THE FIELD AND APPROVED BY DIVISION OF PLANNING PERSONNEL PRIOR TO ANY CONSTRUCTION.

ALL LOOPS SHALL BE 6'X6' SQUARE AND SHALL BE INSTALLED 16' FROM LEADING EDGE TO LEADING EDGE AS SHOWN. PIEZOELECTRIC SENSORS (PIEZOS) SHALL BE INSTALLED 5' FROM THE EDGE OF LOOPS WITH THE EDGE OF EACH PIEZO FLUSH WITH THE EDGE OF THE CORRESPONDING DRIVING LANE. LOOPS AND PIEZOS SHALL BE INSTALLED SPLICE-FREE TO THE CABINET. A MINIMUM OF 2' OF WIRE FOR EACH SENSOR SHALL BE COILED AND LABELED INSIDE EACH JUNCTION BOX AND CABINET. DIVISION OF PLANNING PERSONNEL WILL CONNECT THE LOOPS AND PIEZOS INSIDE THE CABINET.

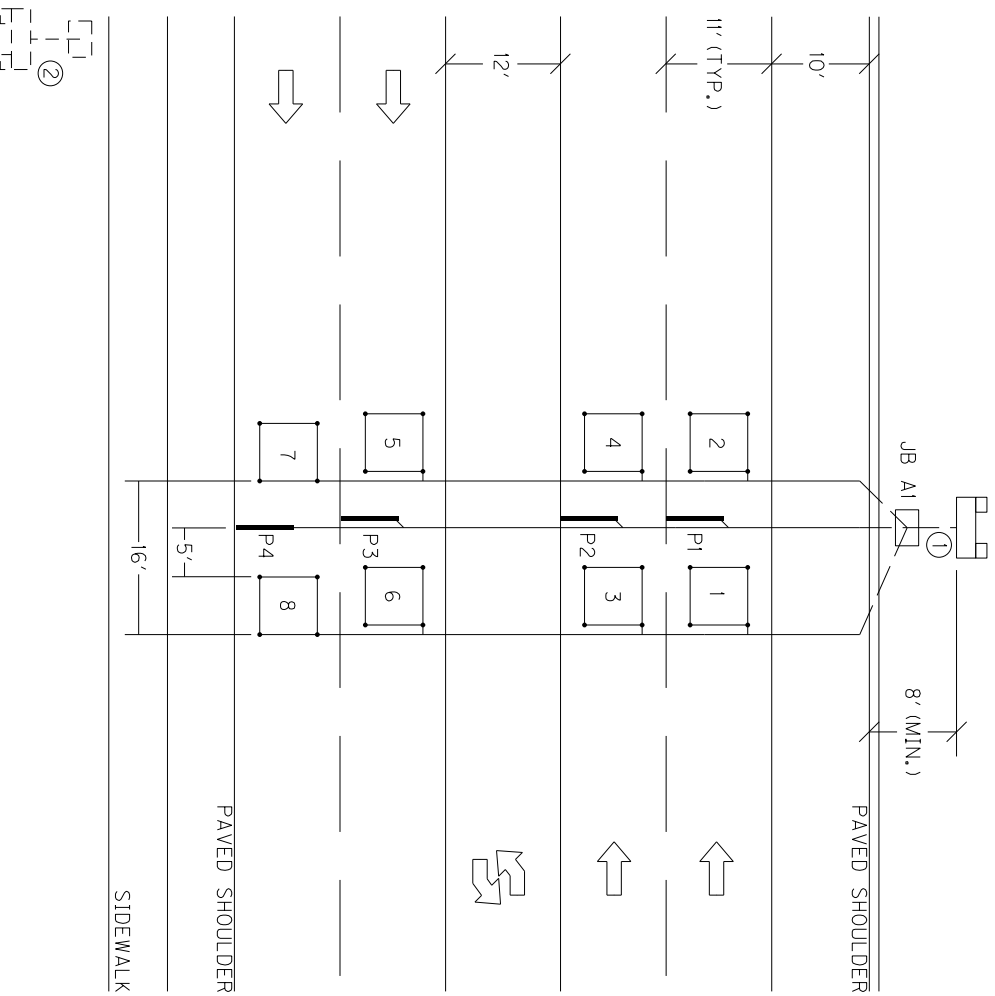
INSTALL ONE (1) 1/4" CONDUIT FROM EACH SAW SLOT TO NEAREST JUNCTION BOX.

INSTALL ONE (1) TYPE A JUNCTION BOX (JB A1)

INSTALL ONE (1) 20"X20"X8" CABINET MOUNTED TO TWO (2) WOOD POSTS.

CODED NOTE:

- ① INSTALL ONE (1) 2" CONDUIT.
- ② REMOVE EXISTING CABINET, POSTS, CONDUIT, JUNCTION BOX, AND WIRE AND DISPOSE OF OFF THE PROJECT.





## **MATERIAL, INSTALLATION, AND BID ITEM NOTES FOR PERMANENT TRAFFIC DATA ACQUISITION STATIONS**

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### **1. DESCRIPTION**

Except as specified in these notes, all work shall consist of furnishing and installing all materials necessary for permanent data acquisition station equipment installation(s) and shall be performed in accordance with the current editions of:

- The Contract
- Division of Planning Standard Detail Sheets
- Kentucky Transportation Cabinet, Department of Highways, *Standard Specifications for Road and Bridge Construction*
- Kentucky Transportation Cabinet, Department of Highways, *Standard Drawings*
- National Fire Protection Association (NFPA) 70: *National Electrical Code*
- Institute of Electrical and Electronic Engineers (IEEE), *National Electrical Safety Code*
- Federal Highway Administration, *Manual on Uniform Traffic Control Devices*
- American Association of State Highway and Transportation Officials (AASHTO), *Roadside Design Guide*.
- Standards of the utility company serving the installation, if applicable

The permanent traffic data acquisition station layout(s) indicate the extent and general arrangement of the proposed installation and are for general guidance. Any omission or commission shown or implied shall not be cause for deviation from the intent of the plans and specifications. Information shown on the plans and in this proposal and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw his own conclusion as to the conditions encountered. The Department of Highways (Department) does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are not in accordance with the information shown. If any modifications of the plans or specifications are considered necessary by the Contractor, details of such modifications and the reasons, therefore, shall be submitted in writing to the Engineer for written approval prior to beginning such modified work.

The Contractor shall contact all utility companies and the district utility agent prior to beginning construction to insure proper clearance and shielding from existing and proposed utilities. The Contractor shall use all possible care in excavating on this project so as not to disturb any existing utilities whether shown on the plans or not shown on the plans. Any utilities disturbed or damaged by the Contractor during construction shall be replaced or repaired to original condition by the Contractor at no cost to the department. If necessary, to avoid existing utilities, the Contractor shall hand dig areas where poles or conduit cross utilities.

Material, Installation, and Bid Item Notes for  
Permanent Traffic Data Acquisition Stations

Revised March, 2012

The Contractor shall be responsible for all damage to public and/or private property resulting from his work.

The Contractor shall inspect the project site prior to submitting a bid and shall be thoroughly familiarized with existing conditions. Submission of a bid will be considered an affirmation of this inspection having been completed. The Department will not honor any claims resulting from site conditions.

## **2. MATERIALS**

All proposed materials shall be approved prior to being utilized. The Contractor shall submit for material approval an electronic file of descriptive literature, drawings and any requested design data for the proposed materials. After approval, no substitutions of any approved materials may be made without the written approval of the Engineer.

Materials requiring sampling shall be made available a sufficient time in advance of their use to allow for necessary testing.

### **2.1. Anchoring**

#### **2.1.1. Anchor and Anchor Rod**

Anchor, except rock anchor, shall be expanding type, with a minimum area of 135 square inches.

Anchor rod shall be galvanized steel, double-eye, have a minimum diameter of 5/8 inches, and a minimum length of 84 inches. Minimum holding capacity shall be 15,400 lbs.

Rock anchor shall be galvanized steel, triple-eye, expanding type, with a minimum diameter of 3/4 inch, a minimum 53 inches long, and a minimum tensile strength of 23,000 lb.

#### **2.1.2. Guy Wire and Guy Guard**

Guy wire shall be Class A, Zinc-coated, 3/8 inch diameter, high strength grade steel (minimum 10,800 lb.) and galvanized per ASTM A475. Guy guard shall be 8' long, fully-rounded, yellow, and able to be securely attached to the guy wire.

#### **2.1.3. Strandwise for Guy Wire**

Strandwise for guy wire shall be 3/8 inch and rated to hold a minimum of 90% of the rated breaking strength (RBS) of the strand used.

### **2.2. Asphalt**

Asphalt shall be a minimum CL2 Asph Surf 0.38C PG64-22 and conform to the *Standard Specifications for Road and Bridge Construction*.

### **2.3. Backer Rod**

Backer rod shall be 1/2 inch diameter, closed cell polyethylene foam and shall meet or exceed the following physical properties:

- Density (average): 2.0 lbs/cu.ft. (minimum): ASTM D 1622 test method
- Tensile Strength: 50 PSI (minimum): ASTM D 1623 test method
- Compression Recovery: 90% (minimum): ASTM D 5249 test method
- Water Absorption: 0.03 gm/cc (maximum): ASTM C 1016 test method

## **2.4. Cabinets**

### **2.4.1. Galvanized Steel Cabinet**

Galvanized Steel Cabinet shall be constructed of 16 or 14 gauge galvanized steel and shall meet or exceed the industry standards set forth by UL 50 and NEMA 3R. The finish shall be an ANSI 61 gray polyester powder finish inside and out over the galvanized steel. Cabinet shall have minimum inside dimensions of 20 inches high by 20 inches wide by 8 inches deep.

The cabinet shall be equipped with the following:

- Drip shield top
- Seam-free sides, front, and back, to provide protection in outdoor installations against rain, sleet, and snow
- Hinged cover with 16 gauge galvanized steel continuous stainless steel pin.
- Cover fastened with captive plated steel screws, knob or latch
- Hasp and staple for padlocking
- No gaskets or knockouts
- Back panel for terminal block installation
- Post mounting hardware
- Terminal Blocks

### **2.4.2. Anchor Bolt for Pad Mounted Cabinet**

Anchor bolt for pad mounted cabinet shall be galvanized steel with minimum dimensions of 3/8 inch by 6 inches.

## **2.5. Concrete**

Concrete shall be Class A and conform to the *Standard Specifications for Road and Bridge Construction*.

## **2.6. Conduit and Conduit Fittings**

Conduit and conduit fittings shall be rigid steel unless otherwise specified.

Conduit shall be zinc galvanized inside and out and conform to the NEC, UL Standard 6, and ANSI C-80.1.

Rigid Steel Conduit Fittings shall be galvanized inside and out and conform to the NEC, UL Standard 514B, and ANSI C-80.4. Intermediate Metal Conduit (IMC) will not be approved as an acceptable alternative to rigid steel conduit.

## **2.7. Conduit sealant**

Conduit sealant shall be weather-, mold-, and mildew-resistant and chemically resistant to gasoline, oil, dilute acids and bases. Conduit sealant shall be closed cell type and shall meet or exceed the following properties:

- |                                    |  |
|------------------------------------|--|
| • Cure Time                        | 20 minutes max.                                |
| • Density                          | 64.4 kg/m <sup>3</sup> ; 6 lbs/ft <sup>3</sup> |
| • Compressive Strength (ASTM 1691) | 13.8 MPa; 330 or 300 psi                       |

- Tensile Strength (ASTM 1623) 15.9 MPa; 270 or 250 psi
- Flexural Strength (ASTM D790) 14.5 MPa; 460 or 450 psi
- Service Temperature -20 to 200 F

## **2.8. Electrical Service Meter Base**

Electrical service meter base shall meet or exceed all requirements of the National Electrical Code and the local utility providing the electrical service.

## **2.9. Electrical Service Disconnect**

Electrical service disconnect shall meet or exceed all requirements of the National Electrical Code and the local utility providing the electrical service.

## **2.10. Flashing Arrow**

Flashing Arrow shall conform to the *Standard Specifications for Road and Bridge Construction*.

## **2.11. Ground Fault Circuit Interrupter (GFCI) Receptacle**

Ground Fault Circuit Interrupter Receptacle shall be 2-pole, 3-wire, 20 Amp, 125 Volt, 60 Hz, NEMA 5-20R configuration and meet or exceed the following standards and certifications:

- NEMA WD-1 and WD-6
- UL 498 and 943
- NOM 057
- ANSI C-73

This item shall include a UL listed, 4 inch x4 inch x 2<sup>1</sup>/<sub>8</sub> inch box with ¾ inch side and end knockouts and a 1½ inches deep, single-receptacle cover to house the GFCI receptacle. Box and cover shall be hot rolled, galvanized steel with a minimum thickness of 0.62 inches.

## **2.12. Grounding**

### **2.12.1. Ground Rod**

Ground Rod shall be composite shaft consisting of a pure copper exterior (5 mil minimum) that has been inseparably molten welded to a steel core. Ground Rod shall have a minimum diameter of 5/8 inch, a minimum length of 8 feet and shall be manufactured for the sole purpose of providing electrical grounding.

### **2.12.2. Ground Rod Clamp**

Ground rod shall be equipped with a one piece cast copper or bronze body with a non-ferrous hexagonal head set screw and designed to accommodate a 10 AWG solid through 2 AWG stranded grounding conductor.

## **2.13. Grout**

### **2.13.1. Grout for Inductive Loop Installation**

Grout for inductive loop installation shall be non-shrink, shall meet the requirements of the *Standard Specifications for Road and Bridge Construction*,

and shall be included on the KYTC Division of Materials, *List of Approved Materials*.

### **2.13.2. Grout for Piezoelectric Sensor Installation**

Grout for piezoelectric sensor installation shall be per the piezoelectric sensor manufacturer's recommendation. Grout shall be suitable for installation in both asphalt and Portland cement pavements. Grout shall have a short curing time (tack free in ten minutes; open to traffic in forty minutes; and fully cured within sixty minutes) to prevent unnecessary lane closure time and should be of sufficient consistency to prevent running when applied on road surfaces with a drainage cross slope. Particulate matter within the grout shall not separate or settle and the grout shall not shrink during the curing process.

## **2.14. Hardware**

Except where specified otherwise, all hardware such as nuts, bolts, washers, threaded ends of fastening devices, etc. with a diameter less than 5/8 inch shall be passivated stainless steel, alloy type 316 or type 304. Stainless steel hardware shall meet ASTM F593 and F594 for corrosion resistance. All other nuts and bolts shall meet ASTM A307 and shall be galvanized.

### **2.14.1. Conduit Strap**

Conduit strap shall be double-hole, stainless steel, and sized to support specified conduit. Conduit strap shall attach to wood pole or post with two 2 1/4 inch wood screws.

### **2.14.2. Mounting Strap for Pole Mount Cabinet**

Mounting strap for pole mount cabinet shall be 3/4 inch x 0.03 inch stainless steel; equipped with clips or buckles to securely hold strap

### **2.14.3. Metal Framing Channel and Fittings**

Metal framing channel shall be 1 5/8 inches wide galvanized steel that conforms to ASTM A1011 and ASTM A653. One side of the channel shall have a continuous slot with in-turned edges to accommodate toothed fittings.

Fittings shall be punch pressed from steel plates and conform to ASTM A575 and the physical requirements of ASTM A1011.

## **2.15. Junction Box**

### **2.15.1. Junction Box Type A, B, or C**

Junction Box Type A, B, or C shall meet or exceed ANSI/SCTE 77-2007, Tier 15. Box shall have an open bottom. A removable, non-slip cover marked "PLANNING" shall be equipped with a lifting slot and attached with a minimum of two 3/8 inch stainless steel hex bolts and washers. Type A Box shall have nominal inside dimensions of 13 inches wide by 24 inches long by 18 inches deep. Type B Box shall have nominal inside dimensions of 11 inches wide by 18 inches long by 12

inches deep. Type C Box shall have nominal inside dimensions of 24 inches wide by 36 inches long by 30 inches deep.

**2.15.2. Aggregate for Junction Box Type A, B, or C**

Aggregate for junction box type A, B, or C shall be gradation size no. 57 and conform to the *Standard Specifications for Road and Bridge Construction*.

**2.15.3. Junction Box 10x8x4**

Junction Box Type 10x8x4 shall be constructed of a UV-stabilized, nonmetallic material or non-rusting metal and be weatherproof in accordance with NEMA 4X. Box shall be equipped with an overhanging door with a continuous durable weatherproof gasket between the body and door. Door shall be hinged with stainless steel screws, hinge(s) and pin(s) and shall be equipped with a stainless steel padlockable latch on the side opposite the hinge(s). Junction Box 10x8x4 shall have minimum inside dimensions of 10 inches high by 8 inches wide by 4 inches deep.

**2.16. Maintain and Control Traffic**

Materials for the bid item Maintain and Control Traffic shall conform to the *Standard Specifications for Road and Bridge Construction*, and the KYTC Department of Highways *Standard Drawings*.

**2.17. Piezoelectric Sensor**

Piezoelectric sensor (piezo) shall provide a consistent level voltage output signal when a vehicle axle passes over it, shall have a shielded transmission cable attached, and shall meet the following requirements:

- Dimensions: such that sensor will fit in a ¾ inch wide by 1 inch deep saw cut. Total length shall be as specified.
- Output uniformity:  $\pm 7\%$  (maximum)
- Typical output level range: 250mV (minimum) from a wheel load of 400 lbs.
- Working temperature range: -40° to 160° F.
- Sensor life: 30 million Equivalent Single Axle Loadings (minimum)

Shielded transmission cable shall be coaxial and shall meet the following requirements:

- RG 58C/U with a high density polyethylene outer jacket rated for direct burial
- Length shall be a minimum of 100 feet. Installations may exceed 100 feet so the piezo shall be supplied with a lead-in of appropriate length so that the cable can be installed splice-free from the piezo to the cabinet.
- Soldered, water resistant connection to the sensor.

One installation bracket for every 6 inches of sensor length shall also be supplied. Piezo shall be a RoadTrax BL Class I or approved equal.

## **2.18. Saw Slot Sealant**

Saw Slot Sealant shall be non-shrink, non-stringing, moisture cure, polyurethane encapsulant suitable for use in both asphalt and concrete pavements. It shall provide a void-free encapsulation for detector loop cables and adequate compressive yield strength and flexibility to withstand heavy vehicular traffic and normal pavement movement.

The cured encapsulant shall meet or exceed the following:

- Hardness (Indentation): 35-65 Shore A, ASTM D2240
- Tensile Strength: 150 psi minimum, ASTM D412
- Elongation: 125% minimum 2 inch/minute pull, ASTM D412
- Tack-free Drying Time: 24 hours maximum, ASTM C679
- Complete Drying Time: 30 hours maximum, KM 64-447
- Chemical Interactions (seven day cure at room temperature, 24-hour immersion, KM 64-446):
  - Motor Oil: No effect
  - Deicing Chemicals: No effect
  - Gasoline: Slight swell
  - Hydraulic Brake Fluid: No effect
  - Calcium Chloride (5%): No effect

## **2.19. Seeding and Protection**

Material for Seeding and Protection shall be Seed Mixture Type I and conform to the *Standard Specifications for Road and Bridge Construction*.

## **2.20. Signs**

Materials for signs shall conform to the *Standard Specifications for Road and Bridge Construction*.

## **2.21. Splicing Materials**

### **2.21.1. Electrical Tape**

Electrical tape shall be a premium grade, UL-listed, all-weather, vinyl-insulating tape with a minimum thickness of 7 mil. Tape shall be flame retardant and resistant to abrasion, moisture, alkalis, acids, corrosion, and weather (including ultraviolet exposure).

### **2.21.2. Splice Kit**

Splice kit shall be inline resin-type and rated for a minimum of 600V. Resin shall be electrical insulating-type and shall provide complete moisture and insulation resistance.

## **2.22. Steel Reinforcing Bar**

Steel reinforcing bar shall be #5 and shall conform to the *Standard Specifications for Road and Bridge Construction*.



### **2.23. Terminal Block**

Terminal block shall be rated for a minimum of 300 V and have a minimum of six terminal pairs with 9/16-inch nominal spacing (center to center) for connecting loop and piezoelectric sensor wires to cable assemblies. Terminal block shall have screw type terminal strips to accommodate wire with spade-tongue ends.

### **2.24. Warning Tape**

Warning tape shall be acid and alkali resistant formulated for direct burial. Tape shall be a minimum of 3 inches wide by 4.0 mils (nominal) thick, and shall be permanently imprinted with a minimum 1 inch black legend on a red background warning of an electric line. Tape shall meet or exceed the following industry specifications:

- American Gas Association (AGA) 72-D-56
- American Petroleum Institute (API) RP 1109
- American Public Works Association (APWA) Uniform Color Code
- Department of Transportation (DOT) Office of Pipeline Safety USAS B31.8
- Federal Gas Safety Regulations S 192-321 (e)
- General Services Administration (GSA) Public Buildings Service Guide: PBS 4-1501, Amendment 2
- National Transportation Safety Board (NTSB) PSS 73-1
- Occupational Safety and Health Administration (OSHA) 1926.956 (c) (1)

### **2.25. Wire and Cable**

All cable and wire shall be plainly marked in accordance with the National Electrical Code (NEC).

#### **2.25.1. Loop Wire**

Loop wire shall be 14 AWG, stranded, copper, single conductor, and shall conform to the International Municipal Signal Association (IMSA) Specification No. 51-7.

#### **2.25.2. Cable No. 14/1 Pair**

Cable No. 14/1 pair loop lead-in cable shall be 14 AWG, stranded, copper paired, electrically shielded conductors, and shall conform to IMSA 19-2.

#### **2.25.3. Grounding conductor**

Grounding conductor and bonding jumper shall be solid or stranded, 4 AWG bare copper.

#### **2.25.4. Service Entrance Conductor**

Service entrance conductor shall be stranded, copper, Type USE-2, sized as required to comply with the NEC.

#### **2.25.5. Telephone Wire**

Telephone wire shall be Category 3 (Cat 3) or Category 5 (Cat 5) and shall be equipped with an RJ-11 modular plug.

**2.25.6. Terminal for electrical wire or cable**

Terminal for electrical wires or cables shall be insulated, solderless, spade tongue terminals of correct wire and stud size. Terminal for electrical wires or cables shall be incidental to the wire or cable (including piezoelectric sensor transmission cable) to be connected to terminal strips.

**2.26. Wood Post**

Wood post shall be pretreated to conform to the American Wood Preservers' Association (AWPA) C-14 and shall have minimum dimensions of 4 inches by 4 inches by 8 feet long (for Galvanized Steel Cabinet) or 4 feet long (for Junction Box 10x8x4), sawed on all four sides with both ends square.

**2.27. Wooden Pole**

Wooden pole shall be a Class IV wood pole of the length specified and shall conform to the *Standard Specifications for Road and Bridge Construction* except the pole shall be treated in accordance with AWPA P9 Type A.

### **3. CONSTRUCTION METHODS**

The plans indicate the extent and general arrangement of the installation and are for guidance. When the Contractor deems any modifications to the plans or specifications necessary, details of such changes and the reasons shall be submitted in writing to the engineer for written approval prior to beginning the modified work.

After the project has been let and awarded, the Division of Construction shall notify the Division of Planning of the scheduled date for a Pre-Construction meeting so that prior arrangements can be made to attend. This will allow the Division of Planning an opportunity to address any concerns and answer any questions that the Contractor may have before beginning the work.

The Division of Planning Equipment Management Team (502-564-7183) shall be notified a minimum of seven days before any work pertaining to these specifications begins to allow their personnel the option to be present during installation.

Unless otherwise specified, installed materials shall be new.

Construction involving the installation of loops or piezoelectric sensors shall not be performed when the temperature of the pavement is less than 38°F.

A final inspection will be performed by a member of the Central Office Division of Planning equipment staff after the installation is complete to verify that the installation is in compliance with the plans and specifications.

Any required corrective work shall be performed per the *Standard Specifications for Road and Bridge Construction*.

#### **3.1. Anchoring**

Furnish: Anchor, anchor rod, guy wire, strand vise, guy guard.

Anchor shall be installed in relatively dry and solid soil. Rock anchor shall be installed in solid rock. Excavate the hole at a 45° to 60° angle in line with the guy (hole size shall be slightly larger than the expanded anchor – see manufacturer's recommendation). Attach rod to anchor, install assembly into hole, and expand anchor. Backfill and tamp entire disturbed area. The effectiveness of the anchor is dependent upon the thoroughness of backfill tamping. Attach guy to strand vise on pole and anchor rod and tighten to required tension. Install guy guard on guy.

#### **3.2. Bore and Jack Pipe – 2"**

Furnish: Steel Encasement Pipe, 2"

Bore and jack pipe – 2" shall conform to the Section 706 of the *Standard Specifications for Road and Bridge Construction*.

### **3.3. Cleanup and Restoration**

Furnish: Seed Mix Type 1 (as required); fertilizer (as required); agricultural limestone (as required); mulch or hydromulch (as required); tackifier (as required).

The Contractor shall be responsible for repairing any damage to public and/or private property resulting from his work. Upon completion of the work, restore all disturbed highway features in like kind design and materials. This shall include filling any ruts and leveling ground appropriately. Contractor shall dispose of all waste and debris off the project. Sow all disturbed earthen areas with Seed Mix Type 1 per Section 212 of the *Standard Specifications for Road and Bridge Construction*. All materials and labor necessary for cleanup and restoration shall be considered incidental to other bid items.

### **3.4. Conduit**

Furnish: Conduit; conduit fittings; bushings (grounding where required); LB condulets (as required); weatherheads (as required); conduit straps; hardware; conduit sealant.

Conduit that may be subject to regular pressure from traffic shall be laid to a minimum depth of 24 inches below grade. Conduit that will not be subject to regular pressure from traffic shall be laid to a minimum depth of 18 inches below grade.

Conduit ends shall be reamed to remove burrs and sharp edges. Cuts shall be square and true so that the ends will butt together for the full circumference of the conduit. Tighten couplings until the ends of the conduit are brought together. Do not leave exposed threads. Damaged portions of the galvanized surfaces and untreated threads resulting from field cuts shall be painted with an Engineer-approved, rust inhibitive paint. Conduit bends shall have a radius of no less than 12 times the nominal diameter of the conduit, unless otherwise shown on the plans.

Contractor shall install a bushing (grounding bushing where required) on both ends of all conduits. Cap spare conduits on both ends with caps or conduit sealant.

Conduit openings in junction boxes and cabinets shall be waterproofed with a flexible, removable conduit, working it around the wires, and extending it a minimum 1 inch into the end of the conduit.

After the conduit has been installed and prior to backfilling, the conduit installation shall be inspected and approved by the Engineer.

### **3.5. Electrical Service**

Furnish: Meter base, service disconnect, wire, GFCI AC duplex receptacle with box and cover; conduit, conduit fittings, bushings (grounding where required); LB condulets (as required); weatherhead; conduit straps; hardware; conduit sealant; ground rod with clamp; grounding conductor.

Prior to any construction, the Contractor shall initiate a work order with the local power

company for the installation of electrical service to the site. A representative from the Division of Planning and the local power company shall be consulted prior to choosing an exact location for the pole. The Contractor shall clear the right-of-way for the electrical service drop.

Contractor shall obtain electrical inspections, memberships, meter base, service disconnect and any other requirements by the utility serving the installation and pay all fees as required.

Install meter-base and disconnect panel with a 30-ampere, fused, circuit breaker inside. Install a manufactured weatherproof hub connectors to connect the conduit to the top of the meter base and service disconnect.

Install a rigid  $\frac{3}{4}$  inch conduit with three 8 AWG service conductors from the cabinet, through the service disconnect to the meter base and a  $1\frac{1}{4}$ " conduit with three 8 AWG service conductors from the meter base to a weatherhead two feet from the top of the electrical service pole. Install conduit straps 30 inches on center and provide a drip loop where the wire enters the weatherhead. Splice electric drop with service entrance conductors at the top of the pole.

The limit of conduit incidental to "Install Electrical Service" for a pad mounted cabinet is 24 inches beyond face of service pole.

Install a 120-volt, 20-amp GFCI AC duplex receptacle with box and cover in the automatic data recorder (ADR) cabinet.

Install a ground rod with clamp. Install a grounding conductor wire from the meter base, through the disconnect panel, to the ground rod clamp. Install grounding conductor in  $1\frac{3}{4}$ " conduit from service disconnect to ground rod.

After completing the installation and before the electrical service is connected, obtain a certificate of compliance from the Kentucky Department of Housing, Buildings and Construction, Electrical Inspection Division.

### **3.6. Flashing Arrow**

Furnish: Arrow Panel

Construction of Flashing Arrow shall conform to the *Standard Specifications for Road and Bridge Construction*.

### **3.7. Galvanized Steel Cabinet**

Furnish: Cabinet; wood posts; concrete; conduit fittings; metal framing channel; pipe clamp; terminal block(s); spade tongue wire terminals; wire labels; hardware.

Where right-of-way allows, locate the cabinet such that it is outside the clear zone in accordance with the *Roadside Design Guide*. Install Cabinet such that the door of the

cabinet faces the roadway.

Excavate as required and install wood posts to a depth of 36 inches and place concrete around posts as shown on the standard detail sheets. Install metal framing channel with pipe clamp between posts.

Install Cabinet on wood posts 38 inches above the finished grade as shown on the standard detail sheets. Install a unistrut between posts when two posts are specified.

Install the required number of terminal blocks on the cabinet back plate. Install a spade tongue terminal on each loop and piezo sensor wire entering the cabinet and connect wires to terminal block(s). Wiring shall be neat and orderly. Label all wires and cables inside cabinet.

Install conduit from ground to cabinet and attach to pipe clamp. Install locknuts to attach conduit to cabinet and install a conduit bushing as shown on the standard detail sheets.

### **3.8. Grounding**

Furnish: Ground rod with clamp; grounding conductor.

At sites with electrical or solar service, all conduits, poles, and cabinets shall be bonded to ground rods and the electrical system ground to form a complete grounded system.

Install such that top of ground rod is a minimum of 3 inches below finished grade.

Grounding systems shall have a maximum 25 ohms resistance to ground. If the resistance to ground is greater than 25 ohms, two or more ground rods connected in parallel shall be installed. Adjacent ground rods shall be separated by a minimum of 6 feet.

### **3.9. Install Pad Mount Enclosure**

Furnish: Concrete; anchor bolts with washers and nuts; conduit; conduit fittings; conduit grounding bushings; ground rod with clamp; grounding conductor; conduit sealant; wooden stakes (where required); wire labels; hardware.

The Contractor shall be responsible for securing the enclosure from the Central Office Division of Planning Warehouse in Frankfort and transporting it to the installation site.

Where right-of-way allows, locate the enclosure such that it is outside the clear zone in accordance with the *Roadside Design Guide*.

Excavate as required, and place concrete to construct the enclosure foundation as specified on the standard detail sheets. Install enclosure on the concrete base such that the door(s) of the enclosure opens away from traffic (hinges away from traffic). Install anchor bolts, washers, and nuts to secure the enclosure to the foundation.

Install ground rod with clamp and install one ¾ inch rigid conduit from enclosure base to

ground rod. Install a grounding conductor from ground rod to enclosure base and bond to each conduit bushing in the base.

Install two ¾ inch rigid steel conduits: one for electrical service and one for telephone service from the base of the enclosure to 24 inches beyond the concrete base. Make all field wiring connections to the electrical service and/or telephone service, as applicable.

If electrical and/or telephone service are not provided as bid items in the contract, plug conduit on both ends with a cap, conduit sealant, or electrical tape. Mark the location of the buried conduit end(s) with a wooden stake labeled “¾ in. conduit.”

Install specified rigid steel conduit(s) into the base of the enclosure for sensor wire entry. Install one spare 2 inch conduit from the enclosure base to 2 feet beyond the concrete base. Plug spare conduit on both ends with a cap, conduit sealant or electrical tape.

The limit of all conduits incidental to “Install Pad Mount Enclosure” is 24 inches beyond the edge of the concrete base.

Wiring in enclosure shall be neat and orderly. Label all wires and cables inside enclosure. KYTC personnel will furnish and install terminal blocks and connect sensors to terminal blocks.

### **3.10. Install Controller Cabinet**

Furnish: Mounting brackets; mounting straps; conduit; LB condulets; conduit fittings; conduit grounding bushings; ground rod with clamp; grounding conductor; cable staples; conduit sealant; wooden stakes (where required); wire labels; hardware.

The Contractor shall be responsible for securing the cabinet from the Central Office Division of Planning Warehouse in Frankfort and transporting it to the installation site. Any existing holes in the cabinet not to be reused shall be covered or plugged to meet NEC requirements.

Install mounting brackets and secure cabinet to pole with mounting straps.

Install a ground rod with clamp. Install grounding conductor in 1-¾” conduit from cabinet to ground rod.

Install one ¾ inch rigid steel conduit with two lb condulets from cabinet to electrical service disconnect box. Install one ¾ inch rigid steel conduit with two LB condulets from cabinet to telephone network interface device box. Make all field wiring connections to the electrical service and/or telephone service, as applicable.

If electrical and/or telephone service are not provided as bid items in the contract, plug conduit on both ends with cap, plumbers putty, conduit sealant, or electrical tape. Mark the location of the buried conduit end(s) with a wooden stake labeled “¾ in. conduit”.

Install specified rigid steel conduit(s) and type LB conduit(s) into the bottom of the cabinet for sensor wire entry. The limit of conduits incidental to "Install Controller Cabinet" is 24 inches beyond the face of the pole.

Wiring in cabinet shall be neat and orderly. Label all wires and cables inside cabinet. KYTC personnel will furnish and install terminal blocks and connect sensors to terminal blocks.

### **3.11. Junction Box Type 10x8x4**

Furnish: Junction box; wood post; conduit fittings; wire labels; hardware.

Where right-of-way allows, locate the junction box such that it is outside the clear zone in accordance with the Roadside Design Guide.

Excavate as required and install wood post(s) to a depth of 18 inches. Install junction box on wood post such that the bottom of the box is 18 inches above the finished grade as shown on the standard detail sheets. Box shall be installed with four (4) 2½ inch wood screws and washers.

Install locknuts to attach conduit to junction box and install a conduit bushing as shown on the standard detail sheets.

Wiring inside box shall be neat and orderly. Label all wires and cables inside box.

### **3.12. Junction Box Type A, B, or C**

Furnish: Junction box, No. 57 aggregate; grounding conductor

Excavate as required and place approximately 12 inches of No. 57 aggregate beneath the proposed junction box to allow for drainage. Install specified junction box type A, B, or C near the edge of pavement, flush with finished grade per the detail sheets. Where required, orient the box so that the dimensions comply with the National Electrical Code. Stub conduits with grounding bushings into junction box at its base to accommodate wires and connect grounding conductor to all grounding bushings. Backfill to existing grade, and restore disturbed area to the satisfaction of the Engineer.

Wiring inside box shall be neat and orderly. Label all wires and cables inside box.

### **3.13. Loops**

Furnish: Wire; saw slot sealant; backer rod; grout; conduit sealant.

The plans and notes specify the approximate location for loop installations. Prior to sawing slots or drilling cores, the Contractor shall meet with a representative of the Division of Planning to verify the precise layout locations on site. Avoid expansion joints and pavement sections where potholes, cracks, or other roadway flaws exist.

Upon completion of this meeting, the Contractor shall measure out and mark the



proposed loop locations with spray paint or chalk such that the saw slots will be parallel and perpendicular to the direction of traffic. Marked lines shall be straight and exact to the locations determined and sized as shown on the plans. Unless indicated otherwise, loops shall be 6 feet by 6 feet square and loops in the same lane shall be spaced 16 feet from leading edge to leading edge.

On resurfacing, rehabilitation, and new construction projects that include new asphalt pavement, the Contractor shall install loops prior to laying the final surface course. On projects with milling and texturing, the Contractor may install the loops prior to or after the milling operation; however, if installed prior to milling, the Contractor shall be responsible for ensuring that the loops are installed at a depth such that the milling operation will not disturb the newly installed loops. The Contractor shall correct damage caused by the milling operations to newly installed loops prior to placement of the final surface course at no additional cost to the Cabinet.

For projects that include the installation of new asphalt and piezoelectric sensors, the Contractor shall mark or otherwise reference all loops installed prior to the final surface course such that the loops can be accurately located when the piezoelectric sensors are installed after placement of the final surface course.

For projects that do not have asphalt surfacing, the Contractor shall install the loops in the surface of the pavement.

The Prime Contractor shall coordinate the installation of loops with the electrical sub-Contractor and the Engineer to ensure correct operation of the completed installation.

The following is a typical step by step procedure for the installation of a loop.

- Carefully mark the slot to be cut, perpendicular to the flow of traffic and centered in the lane.
- Make each saw-cut 3/8-inch wide and at a depth such that the top of the backer rod is a minimum of 2 inches below the surface of rigid (PCC/Concrete) pavement or 4 inches below the surface of asphalt pavement.
- Drill a 1½ inch core hole at each corner and use a chisel to smooth corners to prevent sharp bends in the wire.
- Clean ALL foreign and loose matter out of the slots and drilled cores and within 1 foot on all sides of the slots using a high pressure washer.
- Completely dry the slots and drilled cores and within 1 foot on all sides of the slots using oil-free forced air, torpedo heaters, electric heaters, or natural evaporation, depending on weather conditions. Be very careful not to burn the asphalt if heat is used.
- Measure 9-12 inches from the edge of the paved surface (shoulder break or face of curb) and drill a 1½ inch hole on a 45° angle to the conduit adjacent to the roadway.

- Closely inspect all cuts, cores, and slots for jagged edges or protrusions prior to the placement of the wire. All jagged edges and protrusions shall be ground or re-cut and cleaned again.
- Place the loop wire splice-free from the termination point (cabinet or junction box) to the loop, continue around the loop for four turns, and return to the termination point.
- Push the wire into the saw slot with a blunt object such as a wooden stick. Make sure that the loop wire is pushed fully to the bottom of the saw slot.
- Install conduit sealant to a minimum of 1" deep into the cored 1½ inch hole.
- Apply loop sealant from the bottom up and fully encapsulate the loop wires in the saw slot. The wire should not be able to move when the sealant has set.
- Cover the encapsulated loop wire with a continuous layer of backer rod along the entire loop and home run saw slots such that no voids are present between the loop sealant and backer rod.
- Finish filling the saw cut with non-shrinkable grout per manufacturer's instructions. Alleviate all air pockets and refill low spaces. There shall be no concave portion to the grout in the saw slot. Any excess grout shall be cleaned from the roadway to alleviate tracking.
- Clean up the site and dispose of all waste off the project.
- Ensure that the grout has completely cured prior to subjecting the loop to traffic. Curing time varies with temperature and humidity.

Exceptions to installing loop wire splice-free to the junction box or cabinet may be considered on a case-by-case basis and must be pre-approved by the Engineer. If splices are allowed, they shall be located in a junction box and shall conform to the construction note for Splicing.

If loop lead-in cable (Cable No. 14/1 Pair) is specified, cable shall be installed splice free to the cabinet ensuring that extra cable is left in each junction box or cabinet. All wires and cables shall be labeled in each junction box and cabinet.

Loop inductance readings shall be between 100 and 300 microhenries. The difference of the loop inductance between two loops in the same lane shall be  $\pm 20$  microhenries. Inductance loop conductors shall test free of shorts and grounds. Upon completion of the project, all loops must pass an insulation resistance test of at least 100 million ohms to ground when tested with a 500 Volt direct current potential in a reasonably dry atmosphere between conductors and ground.

### **3.14. Maintain and Control Traffic**

Furnish (all as required): Drums, traffic cones, barricades used for channelization purposes, delineators, and object markers.

Maintain and Control Traffic shall conform to the plans, the Standard Specifications for Road and Bridge Construction, and the KYTC Department of Highways Standard Drawings.

### 3.15. Open Cut Roadway

Furnish: Concrete, reinforcing bars.

Excavate trench by sawing and chipping away roadway to dimensions as indicated on the detail sheets. After placing conduit, install concrete and steel reinforcing bars per the *Standard Specifications for Road and Bridge Construction*. Restore any disturbed sidewalk to its original condition.

### 3.16. Piezoelectric Sensor

Furnish: Piezoelectric sensor and cable; sensor support brackets; saw slot sealant; backer rod; grout; conduit sealant.

The plans and notes specify the approximate location for piezoelectric sensor (piezo) installations. Prior to sawing slots or drilling cores, the Contractor shall meet with a representative of the Division of Planning to verify the final layout on site. Avoid expansion joints and pavement sections where potholes, cracks, or other roadway flaws exist. Roadway ruts at the proposed piezo location shall not be in excess of ½ inch under a 4-foot straight edge.

Install the piezo perpendicular to traffic in the final surface course of the pavement. Locate the sensor in the lane as shown on the site layout drawing. Eleven-foot length sensors shall be centered in the lane.

The following is a typical step by step procedure for the installation of a piezo. Refer specifically to the manufacturer's instructions provided with the sensor prior to installation.

- Carefully mark the slot to be cut, perpendicular to the flow of traffic and properly positioned in the lane.
- It is strongly recommended that a ¾ inch wide diamond blade be used for cutting the slot, or that blades be ganged together to provide a single ¾ inch wide cut. The slot shall be wet cut to minimize damage to the pavement.
- Cut a slot ¾ inch wide ( $\pm 1/16$  inch) by 1 inch minimum deep. The slot should be a minimum of 2 inches longer than the sensor (including the lead attachment). Drop the saw blade an extra ½ inch down on both ends of the sensor. The lead out of the passive cable should be centered on the slot.
- Cut the slot for the passive cable ¼ inch wide and at a depth so that the top of the backer rod is a minimum of 2 inches below the road surface.
- Clean ALL foreign and loose matter out of the slot and within 1 foot on all sides of the slot using a high pressure washer.
- Completely dry the slot and within 1 foot on all sides of the slot using oil-free forced air, torpedo heaters, electric heaters, or natural evaporation, depending on weather conditions. Be very careful not to burn the asphalt if heat is used.

Material, Installation, and Bid Item Notes for  
Permanent Traffic Data Acquisition Stations

Revised March, 2012

- Measure 9-12 inches from the edge of the paved surface (shoulder break or face of curb) and drill a 1½ inch hole on a 45° angle to the conduit adjacent to the roadway.
- Place strips of 2-4 inch wide tape strips on the pavement along the lengths of both sides of the sensor slot, 1/8 inch away from the slot.
- Wear clean, protective latex (or equivalent) gloves at all times when handling sensors. Visually inspect sensor to ensure it is straight. Check lead attachment and passive cable for cuts, gaps, cracks and/or bare wire. Verify that the correct sensor type and length is being installed by checking the data sheet. Verify there is sufficient cable to reach the cabinet. Piezo lead-in cable shall not be spliced.
- Test the sensor for capacitance, dissipation factor and resistance, according to the directions enclosed with the sensor. Capacitance and dissipation should be within  $\pm 20\%$  of the piezo data sheet. Resistance (using the 20M setting) should be infinite. Record the sensor serial number and the test results and label “pre-installation.” This information should be stored in the counter cabinet and/or returned to Department Planning personnel.
- Lay the sensor next to the slot and ensure that it is straight and flat.
- Clean the sensor with steel wool or an emery pad and wipe with alcohol and a clean, lint-free cloth.
- Place the installation bracket clips every 6 inches along the length of the sensor.
- Bend the tip of the sensor downward at a 30° angle. Bend the lead attachment end down at a 15° angle and then 15° back up until level (forming a lazy Z).
- Place the sensor in the slot, with the brass element 3/8 inch below the road surface along the entire length. The tip of the sensor should be a minimum of 2 inches from the end of the slot and should not touch the bottom of the slot. The top of the plastic installation bracket clips should be 1/8 inch below the surface of the road. The lead attachment should not touch the bottom or sides of the slot. Ensure the sensor ends are pushed down per the manufacturer’s instructions.
- Visually inspect the length of the sensor to ensure it is at uniform depth along its length and it is level (not twisted, canted or bent).
- On the passive cable end, block the end of the slot approximately 3-5 inches beyond the end of the lead attachment area creating an adequate “dam” so that the sensor grout does not flow out.
- Use one bucket of sensor grout per piezo installation. Overfill the slot with sensor grout and allow to cure for a minimum of 10 minutes before continuing with the installation. Ensure that sensor grout fills around and beneath the sensor completely and that there is not a trough on top.
- Remove the tape along the sides of the saw slot when the adhesive starts to cure.
- Carefully remove the dam from the end of the sensor.
- Route the lead-in cable through the saw slot
- Install conduit sealant to a minimum of 1” deep into the cored 1½ inch hole.
- Cover the lead-in cable with encapsulant, backer rod, and grout.
- If necessary, after the grout has hardened, grind with an angle grinder until the profile is a 1/16 inch mound. There shall be no concave portion to the mound.

- Clean up the site and dispose of all waste off the project.
- Ensure that the sensor grout has completely cured prior to subjecting the sensor to traffic. Curing time will vary with temperature and humidity.

Upon installation, test the sensor for capacitance, dissipation factor and resistance, according to the directions enclosed with the sensor. Capacitance and dissipation should be within +20% of the piezo data sheet. Resistance (using the 20M setting) should be infinite. Perform a functional test of the piezo with an oscilloscope to ensure that the sensor is generating a proper response to the passage of vehicles.

Record the sensor serial number and the test results and label "post-installation." This information should be stored in the counter cabinet and/or returned to Department Planning personnel.

### **3.17. Pole – Wooden**

Furnish: Pole; anchoring equipment (as required); hardware (as required).

Excavate and install wood pole to a minimum depth of one-sixth the total pole height. Place backfill material in hole and compact until flush with existing grade. Install guy wire, guy guard, anchor, anchor rod, and strand vise, if necessary. Anchor shall be a minimum of one-third the pole height from the face of the pole. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

### **3.18. Removal of Existing Equipment**

The Contractor shall remove existing materials (including but not limited to: poles, anchors, cabinets, junction boxes, conduit and wire) not to be reused. Contractor shall dispose of all removed materials off the project. All materials and labor necessary for the removal of existing equipment shall be considered incidental to other bid items.

### **3.19. Signs**

Furnish: Signs; sign standards; hardware.

Construction of signs shall conform to the *Standard Specifications for Road and Bridge Construction*.

### **3.20. Splicing**

Furnish: Splice kit; solder.

These notes describe the splicing process (if permitted) and are not intended to grant permission to splice. Permission to splice shall be determined by the Division of Planning and the locations shall be shown on the layout sheet. If splicing is needed but not shown on the layout sheet, the Contractor shall receive prior written approval from the Division of Planning.

All splices shall conform to the provisions of the NEC.

Splices for loop and loop lead-in wire shall be twisted and soldered. Abrade the outer jacket of both wires to promote good adhesion and prevent capillary leak paths. Seal the splice with an electrical sealing resin. Spliced loop conductors shall test free of shorts and unauthorized grounds and shall have an insulating resistance of at least 100 megohms when tested with a 500 volt direct current potential in a reasonably dry atmosphere between conductors and ground.

For piezos, the same type coax cable, supplied by the manufacturer, shall be used to splice to the sensor's lead-in cable. Cables shall be soldered. Abrade the outer jacket of both cables to promote good adhesion and prevent capillary leak paths. Seal the splice with an electrical sealing resin. Spliced piezo cables shall be tested and have a minimum resistance of 20 megohms, a maximum dissipation factor of 0.03, a capacitance within the manufacturer's recommended range based upon the length of additional cable. A functional test of the piezo shall be performed to ensure that the sensor is generating a proper response to the passage of vehicles.

### **3.21. Telephone Service**

Furnish: Conduit; conduit fittings; grounding bushings; LB condulets (as required); weatherhead; conduit straps; hardware; conduit sealant.

The Contractor shall contact the local telephone company for the installation of telephone service to the site. Telephone Company will install service to a telephone network interface device (NID) on the pole.

Install rigid  $\frac{3}{4}$  inch conduit with weatherhead from the cabinet to 72 inches above the finished grade and install conduit straps every 30 inches on center. Install telephone cable with and RJ-11 modular plug from NID to cabinet. Leave eight feet of additional telephone cable coiled inside cabinet.

The limit of conduit incidental to "Install Telephone Service" for a pad mounted cabinet is 24 inches beyond face of service pole.

### **3.22. Trenching and Backfilling**

Furnish: Warning tape; seed mix type I; cereal rye or German foxtail-millet; mulch; concrete (as required); asphalt (as required).

Excavate trench and provide required cover as shown on the standard detail sheets. After placing conduit, backfill material shall be placed and compacted in lifts of 9 inches or less. Install warning tape as shown on the detail sheet. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer. This item shall include concrete, asphalt or approved replacement material for sidewalks, curbs, roadways, etc. (if required).

**3.23. Wiring**

Furnish: Wire; wire labels; spade tongue wire terminals (as required).

Installation of all wiring shall conform to the NEC. Permanent identification numbers shall be affixed to all wires in all junction boxes and cabinets (see Layout(s) for loop and piezo numbers).

Additional lengths of each loop and piezo sensor wire shall be neatly coiled in all cabinets and junction boxes as follows:

<u>Enclosure Type</u>	<u>Additional length of each wire</u>
Galvanized Steel Cabinet	2'
Pad Mount Cabinet (332)	8'
Pole Mount Cabinet (336)	4'
Junction Box Type 10x8x4	2'
Junction Box Type A, B, or C	2'

**3.24. Wood Post**

Furnish: Wood post; concrete (as required); seed mix type I; cereal rye or German foxtail-millet; mulch.

Excavate hole to specified depth and place concrete, if required. Install post, backfill to existing grade, and tamp backfill. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

#### **4. BID ITEM NOTES AND METHOD OF MEASUREMENT FOR PAYMENT**

Only the bid items listed will be measured for payment. All other items required to complete the vehicle detection installation shall be incidental to other items of work. Payment at the contract unit price shall be full compensation for all materials, labor, equipment and incidentals to furnish and install these items.

##### **4.1. Bore and Jack Pipe – 2”**

Bore and jack pipe – 2” shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

##### **4.2. Conduit**

Conduit shall include furnishing and installing specified conduit in accordance with the specifications. This item shall include conduit fittings, bodies, boxes, weatherheads, expansion joints, couplings, caps, conduit sealant, electrical tape, clamps, bonding straps and any other necessary hardware. Conduit will be measured in linear feet.

##### **4.3. Electrical Service**

Electrical Service shall include furnishing and installing all necessary materials and payment of all fees toward the complete installation of an electrical service which has passed all required inspections. Incidental to this item shall be furnishing and installing:

- Meter-base per utility company’s specifications
- Service disconnect panel per utility company’s specifications
- Meter base and service disconnect entrance hubs, waterproof
- Service entrance conductors
- Rigid steel conduit
- Rigid steel conduit fittings
- Conduit straps
- Weatherhead
- Duplex GFCI receptacle, 120-volt, 20-amp
- Ground rod with clamp
- Grounding conductor

Also incidental to this item shall be any necessary clearing of right of way for the electrical service drop.

Electrical service will be measured in individual units each.

##### **4.4. Flashing Arrow**

Flashing Arrow shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

##### **4.5. Galvanized Steel Cabinet**

Galvanized Steel Cabinet shall include furnishing and installing galvanized steel cabinet on post as specified. Incidental to this item shall be furnishing and installing grounding hardware, and any necessary post/pole mounting hardware. Also incidental to this item shall be furnishing and installing the required number of terminal blocks and connection of all



sensors to the terminal blocks. Galvanized Steel Cabinet will be measured in individual units each.

#### **4.6. Install Pad Mount Enclosure**

Install Pad Mount Enclosure shall include installing a Department-furnished enclosure as specified on the detail sheets.

This item shall include obtaining the enclosure from KYTC and transporting it to the installation site and furnishing and installing the following:

- Concrete foundation (including any excavation necessary)
- Anchor bolts, lock washers, and nuts
- Conduit
- Conduit fittings (including grounding bushings)
- Weatherhead
- Terminal Strip(s)
- Ground rod with clamp
- Grounding conductor

Install Pad Mount Enclosure will be measured in individual units each.

#### **4.7. Install Controller Cabinet**

Install Controller Cabinet shall include installing a Department-furnished cabinet as specified on the detail sheets.

This item shall include obtaining the cabinet from KYTC and transporting it to the installation site and furnishing and installing the following:

- Conduit
- Conduit Fittings
- Terminal Strip(s)
- Ground rod with clamp
- Grounding conductor

Install Controller Cabinet will be measured in individual units each.

#### **4.8. Junction Box Type 10" x 8" x 4"**

Junction Box Type 10"x8"x4" shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include connectors, splice sleeves, conduit fittings, mounting materials and any other items required to complete the installation. Incidental to this item shall be furnishing and installing specified post (wood, channel, metal, etc.) as required for the installation. Junction Box Type 10"x8"x4" will be measured in individual units each.

#### **4.9. Junction Box Type A, B, or C**

Junction Box Type A, B, or C shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include excavation, furnishing and installing #57 aggregate, backfilling around the box, and restoration of disturbed areas to

the satisfaction of the Engineer. Incidental to this item shall be furnishing and installing a grounding conductor bonding all conduit grounding bushings in the box. Junction Box Type A, B, or C will be measured in individual units each.

#### **4.10. Loop Saw Slot and Fill**

Loop Saw Slot and Fill shall include sawing and cleaning saw slots and furnishing and installing conduit sealant, loop sealant, backer rod, grout, or other specified material. Loop Saw Slot and Fill will be measured in linear feet of sawed slot.

#### **4.11. Maintain and Control Traffic**

Maintain and Control Traffic shall be measured for payment per the *Standard Specifications for Road and Bridge Construction*.

#### **4.12. Open Cut Roadway**

Open Cut Roadway shall include excavating trench (sawing and chipping roadway) to dimensions as indicated on the detail sheets and furnishing and placing concrete, steel reinforcing bars, and asphalt. This item also includes restoring any disturbed sidewalk to its original condition. Open Cut Roadway will be measured in linear feet.

#### **4.13. Piezoelectric Sensor**

Piezoelectric sensor (piezo) shall include sawing and cleaning saw slots and furnishing and installing piezo in accordance with the specifications. This item shall include furnishing and installing lead-in wire, conduit sealant, encapsulation material, backer rod, grout, testing, and accessories. Piezo will be measured in individual units each.

#### **4.14. Pole – 35' Wooden**

Pole – 35' Wooden shall include excavation, furnishing and installing specified wood pole, backfilling and restoring disturbed areas to the satisfaction of the Engineer. Incidental to this item shall be furnishing and installing guy wire, anchor and anchor rod, strand vise, and guy guard, if specified.

Pole – 35' Wooden will be measured in individual units each.

#### **4.15. Signs**

Signs shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

#### **4.16. Telephone Service**

Telephone Services shall include furnishing and installing all necessary materials and payment of all fees toward the complete installation of a telephone service, which has passed all required inspections. Incidental to this item shall be furnishing and installing:

- Telephone cable with an RJ-11 modular plug
- Rigid steel conduit
- Rigid steel conduit fittings
- Conduit straps
- Weatherhead

Telephone service will be measured in individual units each.

**4.17. Trenching and Backfilling**

Trenching and Backfilling shall include excavation, warning tape, backfilling, temporary erosion control, seeding, protection and restoration of disturbed areas to original condition. This item shall include concrete, asphalt or approved replacement material for sidewalks, curbs, roadways, etc. (if required). Trenching and backfilling will be measured in linear feet.

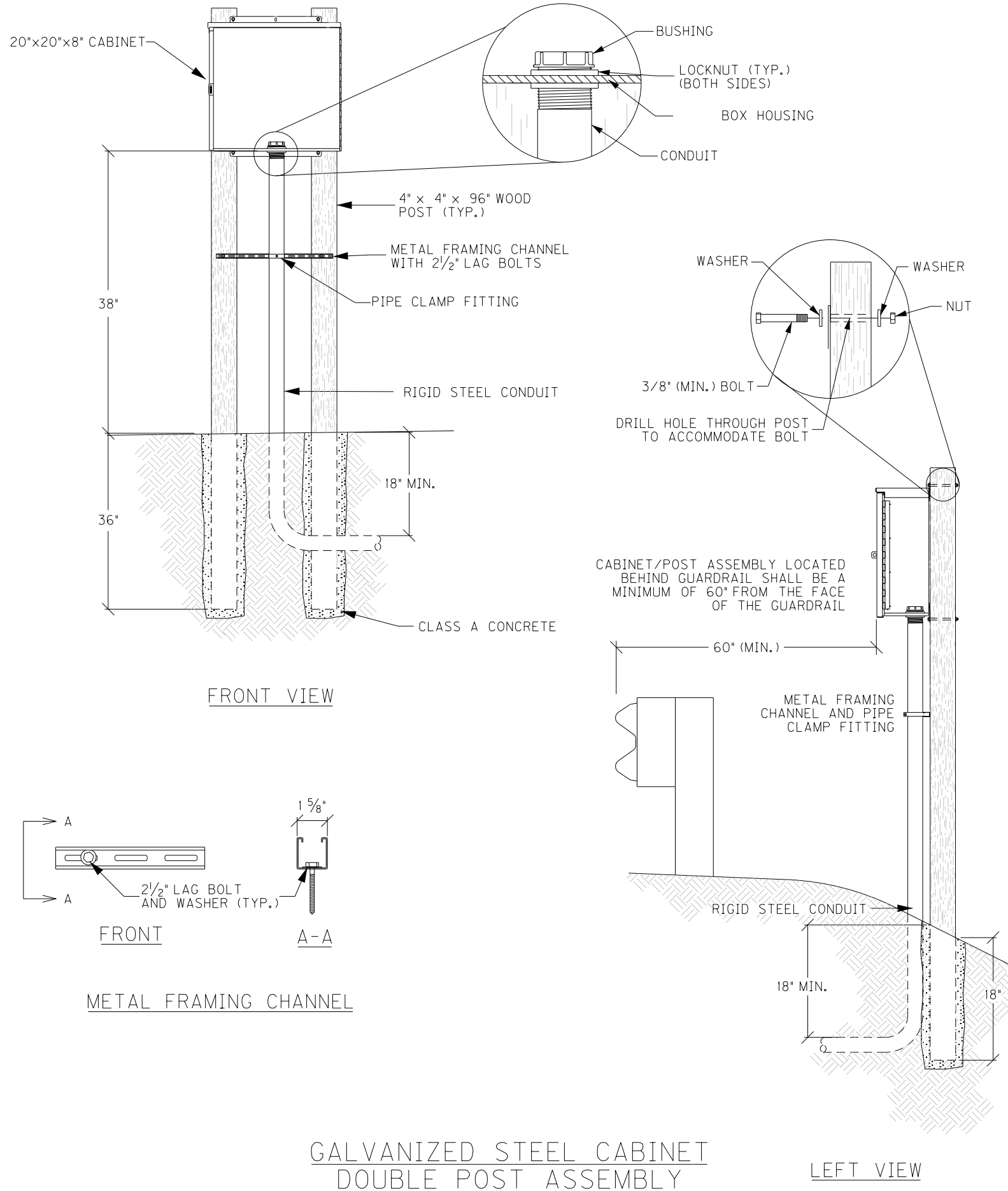
**4.18. Wire or Cable**

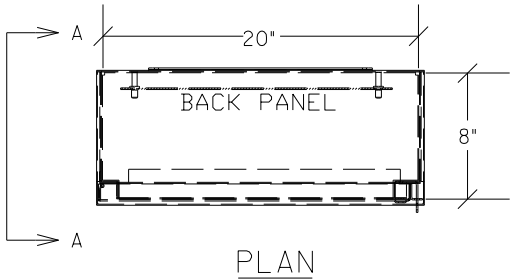
Wire or cable shall include furnishing and installing specified wire or cable within saw slot, conduit, junction box, cabinet, or overhead as indicated on the detail sheets. Incidental to this item shall be the labeling of all wires and cables in each junction box, cabinet and splice box, and furnishing and installing other hardware required for installing cable. Wire or Cable will be measured in linear feet.

**4.19. Wood Post**

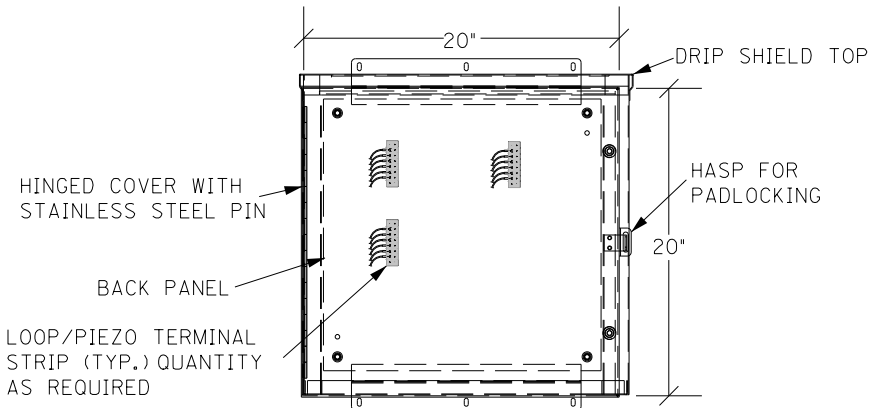
Wood Post shall include furnishing and installing wood post as specified. This item shall include excavation, furnishing and placing concrete (if required), backfilling around the post, and restoration of disturbed areas to the satisfaction of the engineer. Wood Post will be measured in individual units each.



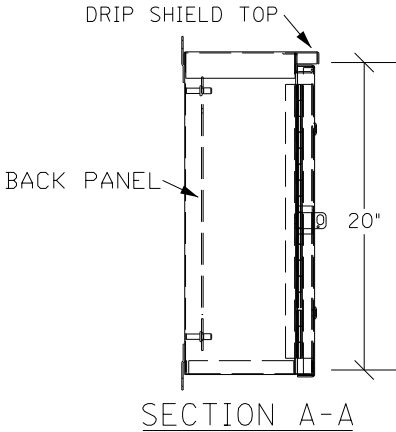




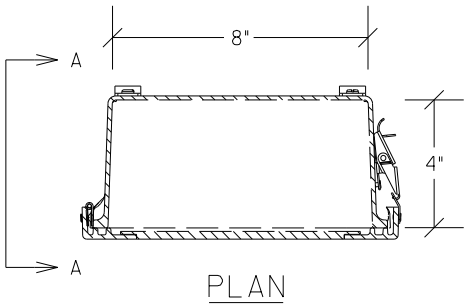
PLAN



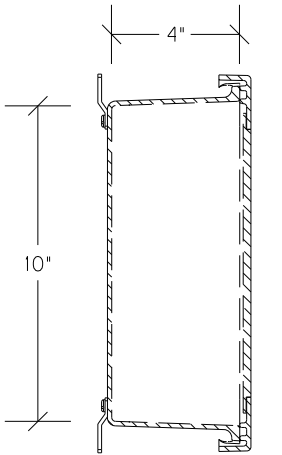
ELEVATION



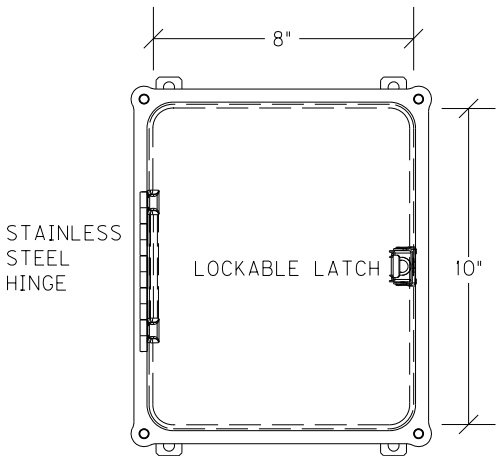
GALVANIZED STEEL CABINET



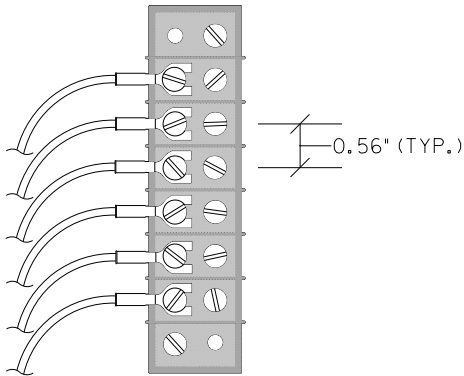
PLAN



SECTION A-A



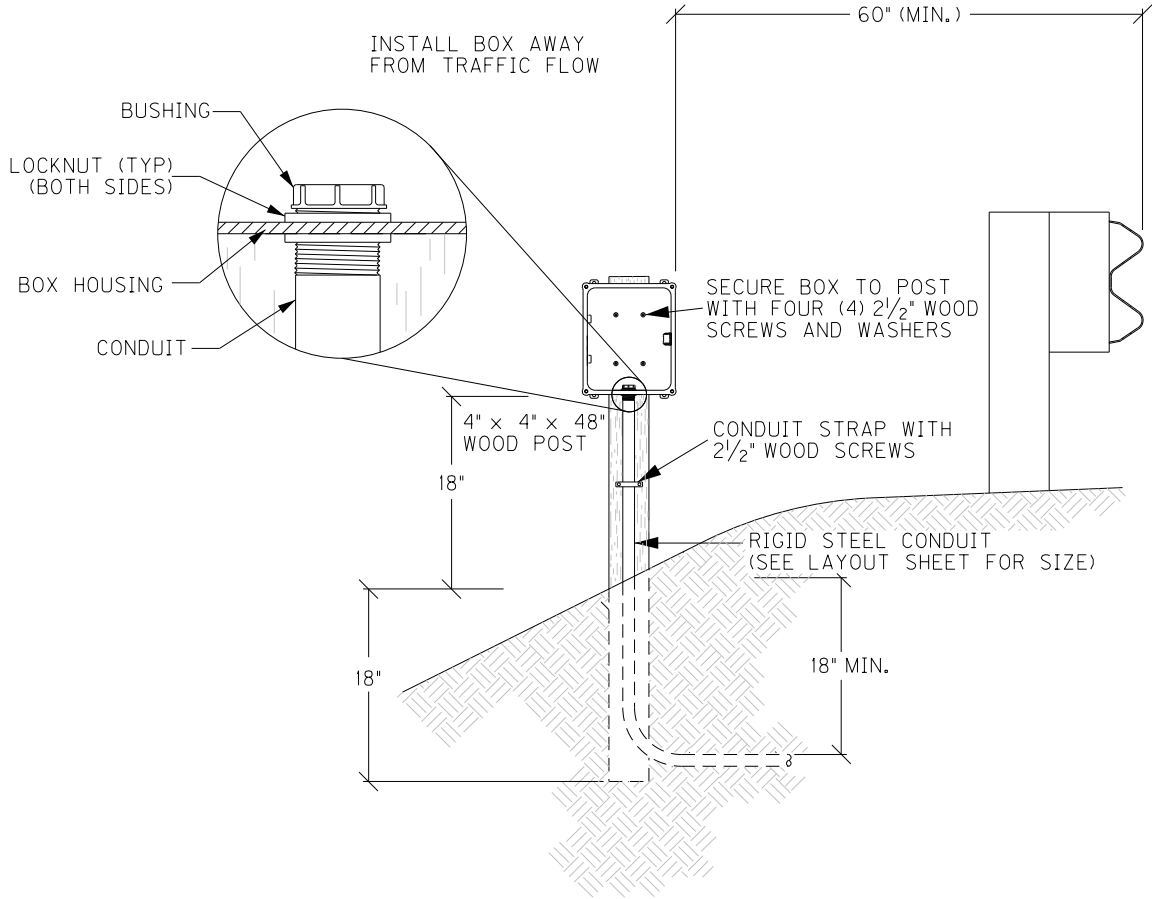
ELEVATION



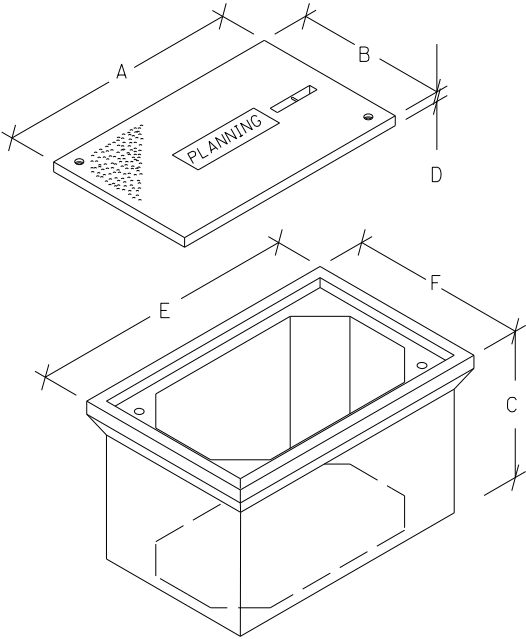
TERMINAL STRIP (TYP.)

JUNCTION BOX 10"X8"X4"

JUNCTION BOX/POST ASSEMBLY LOCATED BEHIND  
GUARDRAIL SHALL BE A MINIMUM OF 60" FROM  
THE FACE OF THE GUARDRAIL

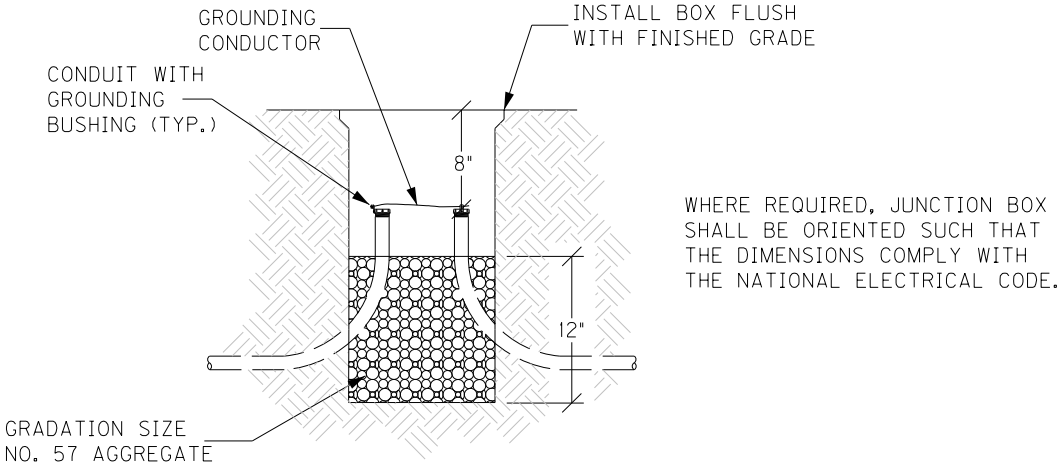


JUNCTION BOX 10"x8"x4"  
AND POST ASSEMBLY

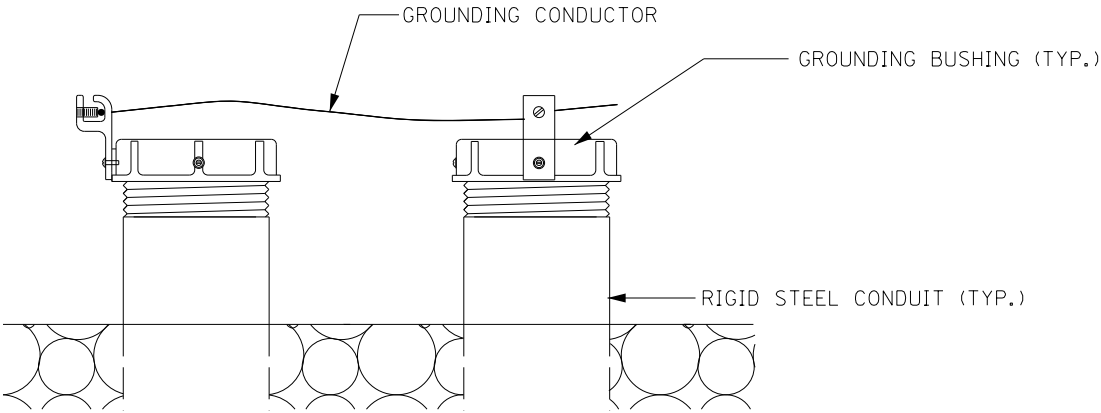


JUNCTION BOX DIMENSIONS (NOMINAL)						
	A	B	C	D*	E	F
TYPE A	23"	14"	18"	2"	25"	16"
TYPE B	18"	11"	12"	1¾"	20"	13"
TYPE C	36"	24"	30"	3"	38"	26"

\* MINIMUM  
STACKABLE BOXES ARE PERMITTED



ELEVATION

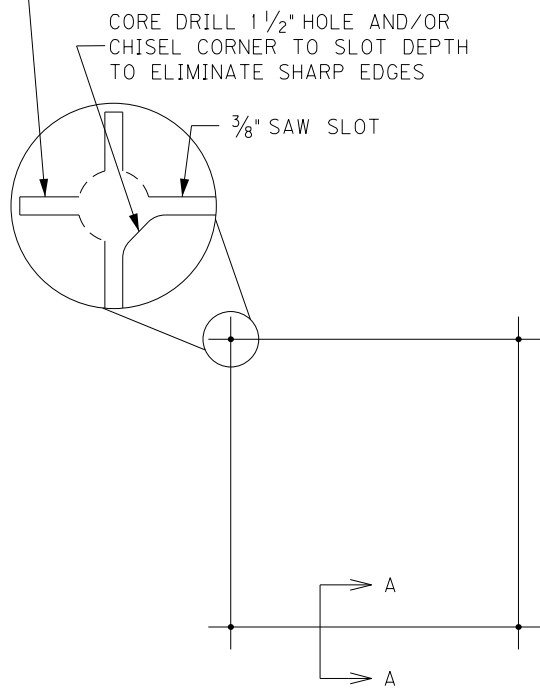


GROUNDING DETAIL

JUNCTION BOX - TYPE A, TYPE B, TYPE C



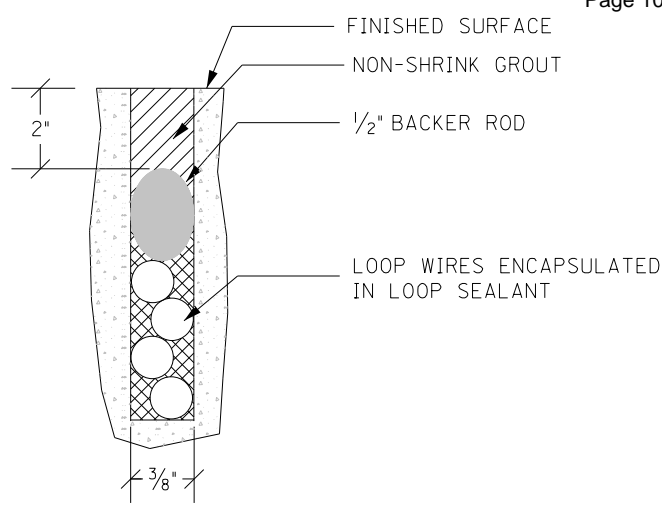
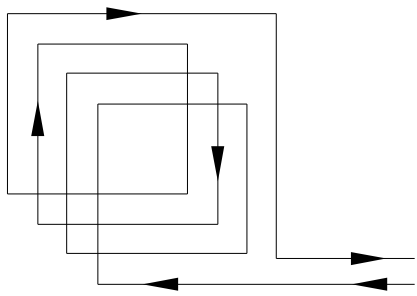
JEFFERSON COUNTY  
STP 0311 (034)



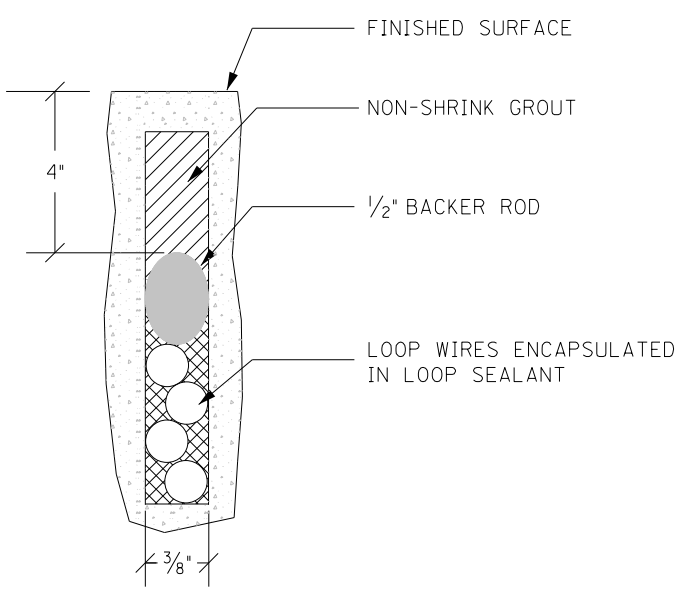
SAW CUT PLAN

UNLESS SPECIFIED OTHERWISE, ALL LOOPS SHALL BE 6' x 6' SQUARE, CENTERED IN EACH LANE, WITH FOUR TURNS OF 14 AWG LOOP WIRE.

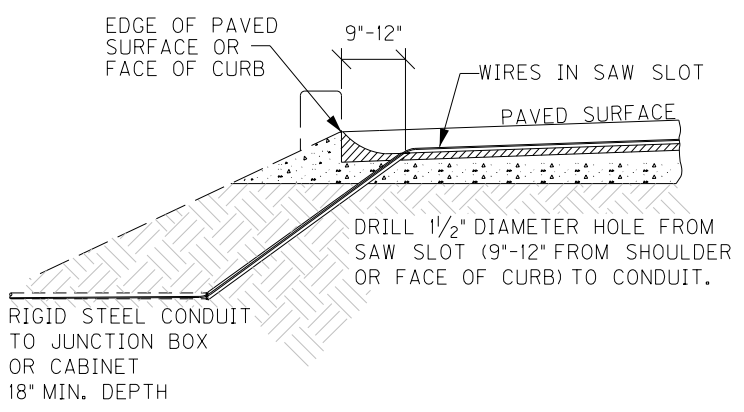
ADJACENT SAW SLOTS SHALL BE A MINIMUM OF 12" APART.



SECTION A-A (CONCRETE)



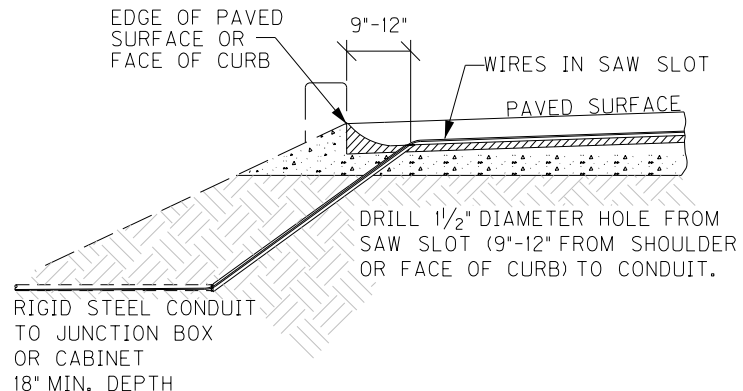
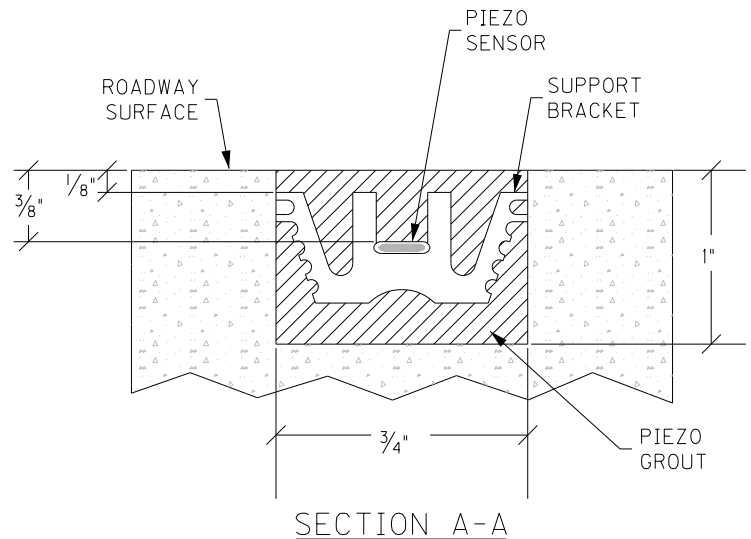
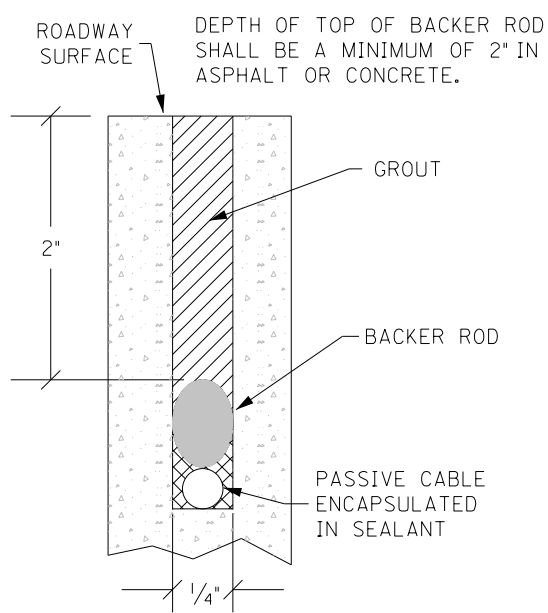
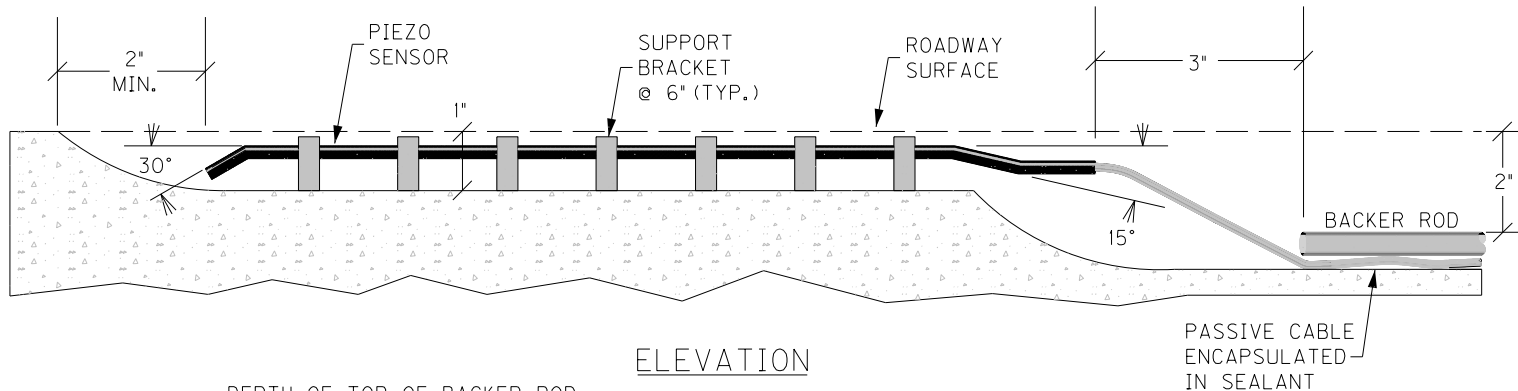
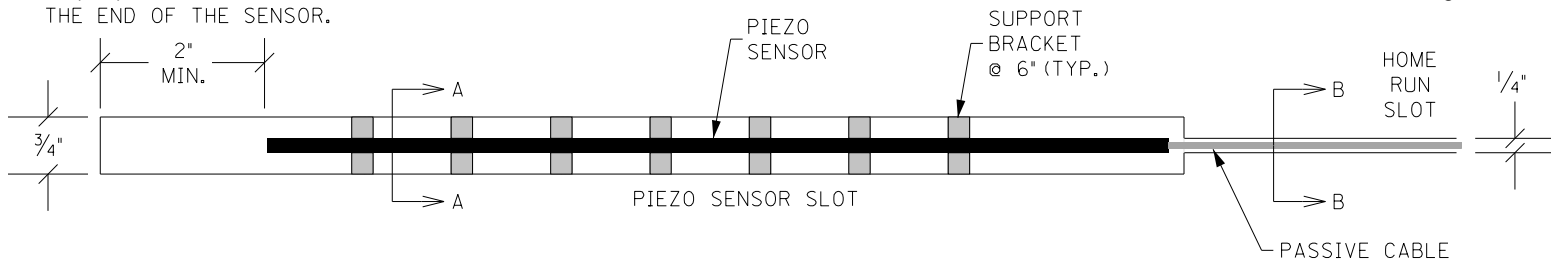
SECTION A-A (ASPHALT)



SAW SLOT EDGE OF PAVEMENT TRANSITION

INDUCTIVE LOOP DETECTOR

JEFFERSON COUNTY SLOTTED A  
STP 031110011 OF 2" BEYOND  
THE END OF THE SENSOR.



# PIEZOELECTRIC SENSOR INSTALLATION

# Right-of-Way Certification Form

Revised 2/22/11

☒ Federal Funded

☒ Original

☐ State Funded

☐ Re-Certification

This form must be completed and submitted to FHWA with the PS&E package for federal-aid funded Interstate, Appalachia, and Major projects. This form shall also be submitted to FHWA for all federal-aid projects that fall under Conditions No. 2 or 3 outlined elsewhere in this form. When Condition No. 2 or 3 apply, KYTC shall resubmit this ROW Certification prior to construction contract Award. For all other federal-aid projects, this form shall be completed and retained in the KYTC project file.

Date: May 21, 2015

Project Name: Pavement Rehab

Letting Date: June 2015

Project #:

County: JEFFERSON

Item #: 5-2074.00

Federal #:

Description of Project: Remove and replace ac pavement on US 31W from just south of Gene Snyder interchange (MP 6.69) to intersection of KY 1931 (MP 11.69) in Jefferson County

## Projects that require NO new or additional right-of-way acquisitions and/or relocations

- ☒ The proposed transportation improvement will be built within the existing rights-of-way and there are no properties to be acquired, individuals, families, and businesses ("relocatees") to be relocated, or improvements to be removed as a part of this project.

## Projects that require new or additional right-of-way acquisitions and/or relocations

- ☐ Per 23 CFR 635.309, the KYTC hereby certify that all relocatees have been relocated to decent, safe, and sanitary housing or that KYTC has made available to relocatees adequate replacement housing in accordance with the provisions of the current FHWA directive(s) covering the administration of the Highway Relocation Assistance Program and that at least one of the following three conditions has been met. (Check those that apply.)

- ☐ Condition 1. All necessary rights-of-way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Fair market value has been paid or deposited with the court.

- ☐ Condition 2. Although all necessary rights-of-way have not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Trial or appeal of some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Fair market value has been paid or deposited with the court for most parcels. Fair market value for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract. (See note 1 below.)




Note 1: The KYTC shall re-submit a right-of-way certification form for this project prior to AWARD of all Federal-Aid construction contracts. Award must not be made until after KYTC has obtained full legal possession and fair market value for all parcels has been paid or deposited with the court and FHWA has concurred in the re-submitted right-of-way certification.

## Right-of-Way Certification Form

Revised 2/22/11

- ☐ **Condition 3.** The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. However, all remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. The KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary rights-of-way will not be fully acquired, and/or some occupants will not be relocated, and/or the fair market value will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction. A full explanation and reason for this request, including identification of each such parcel and dates on which acquisitions, payments, and relocations will be completed, is attached to this certification form for FHWA concurrence (See note 2.)

**Note 2:** The KYTC may request authorization on this basis only in unique and unusual circumstances. Proceeding to bid letting shall be the exception and never become the rule. In all cases, the KYTC shall make extraordinary efforts to expedite completion of the acquisition, payment for all affected parcels, and the relocation of all relocatees prior to AWARD of all Federal-Aid construction contracts or force account construction.

Approved	Ron Geveden		Right-of-Way Supervisor
	Printed Name	Signature	
Approved			KYTC, Director of ROW & Utilities
	Printed Name	Signature	
Approved	No Signature Required as per FHWA - KYTC		FHWA, ROW Officer (when applicable)
	Printed Name	Signature	

2013 Stewardship Agreement

## Right-of-Way Certification Form

Revised 2/22/11

Date: May 21, 2015

Project Name: Pavement Rehab

Project #:

County: JEFFERSON

Item #: 5-2074.00

Federal #:

Letting Date: June, 2015

This project has 0 total number of parcels to be acquired, and 0 total number of individuals or families to be relocated, as well as 0 total number of businesses to be relocated.

☐ Parcels where acquired by a signed fee simple deed and fair market value has been paid

☐ Parcels have been acquired by IOJ through condemnation and fair market value has been deposited with the court

☐ Parcels have not been acquired at this time (explain below for each parcel)

☐ Parcels have been acquired or have a "right of entry" but fair market value has not been paid or has not been deposited with the court (explain below for each parcel)

☐ Relocates have not been relocated from parcels \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. (explain below for each parcel)

Parcel #	Name/Station	Explanation for delayed acquisition, delayed relocation, or delayed payment of fair market value	Proposed date of payment or of relocation

There are 0 billboards and/or 0 cemeteries involved on this project.

There are 0 water or monitoring wells on parcels \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. All have been acquired and are the responsibility of the project contractor to close/cap.

Form Effective Date: April 1, 2006  
Last Revised: February 22, 2011

**SPECIAL NOTES FOR UTILITY CLEARANCE**  
**IMPACT ON CONSTRUCTION**

JEFFERSON, STP 0311 (031)

FD52 056 031W 003-012

US 31W- DIXIE HIGHWAY – PAVEMENT REHABILITATION

ITEM # 5-2074.00

*Utility coordination efforts conducted by the project sponsor have determined that no significant utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.*

**SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES**

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate activities. The contractor will coordinate activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor’s responsibility to verify all utilities and their respective locations before excavating.

**BEFORE YOU DIG**

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

***Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.***

**SPECIAL NOTES FOR UTILITY CLEARANCE**  
**IMPACT ON CONSTRUCTION**

**JEFFERSON, STP 0311 (031)**  
**FD52 056 031W 003-012**  
**US 31W- DIXIE HIGHWAY – PAVEMENT REHABILITATION**  
**ITEM # 5-2074.00**

**AREA UTILITIES CONTACT LIST AS PROVIDED BY KY 811**

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
LG&E KU (Electric)	Greg Geiser	(502) 627-3708
LG&E (Gas)	Greg Geiser	(502) 627-3708
Louisville Water Company	Daniel Tegene, PE	(502) 569-3649
AT&T KY	Morgan Herndon	(502) 458-7312
Time Warner Cable Company	Deno Barbour	(502) 664-7395 <a href="mailto:Dwight.Barbour@TWCable.com">Dwight.Barbour@TWCable.com</a>
	Nathen Howerton	(502) 639-6838 <a href="mailto:Nathen.Howerton@TWCable.com">Nathen.Howerton@TWCable.com</a>
	James Galvin	(270) 765-1818 <a href="mailto:James.galvin@windstream.com">James.galvin@windstream.com</a>
Windstream	Bruce Babbit	(270) 765-1803
	(Send to both contacts)	
	Brandon Flaherty	<a href="mailto:Brandon.Flaherty@LouisvilleMSD.org">Brandon.Flaherty@LouisvilleMSD.org</a>
Indiana Utilities Corporation	Jackie Rogers	(812) 738-3235 <a href="mailto:JackieR@IndianaUtilitiesCorp.com">JackieR@IndianaUtilitiesCorp.com</a>
Level 3 Communications	Tim Boykin	(720) 888-7280 <a href="mailto:Tim.Boykin@Level3.com">Tim.Boykin@Level3.com</a>

COMMONWEALTH OF KENTUCKY  
TRANSPORTATION CABINET  
DEPARTMENT OF HIGHWAYS

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JEFFERSON COUNTY  
**US 31W FIBER INSTALLATION**



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PROJECT DESCRIPTION

GENERAL

This project includes furnishing and installing fiber optic cable to 12 signalizes intersections.

EQUIPMENT AND MATERIALS

All equipment and materials shall be new, free of defects and damage.

- SPECIFICATIONS AND WORKMANSHIP
- Unless otherwise specified, all work shall conform to the following:
- Kentucky Standard Specifications for Road and Bridge Construction, latest edition.
  - FHWA, Manual on Uniform Traffic Control Devices, latest edition.
  - National Electrical Code, latest edition.
  - National Electric Safety Code, latest edition.
  - KYTC Department of Highways Standard Drawings, current editions.
  - KYTC Department of Highways Sepia Drawings, current editions.
  - International Municipal Signal Association (IMSA) Specification No. 51-7, current edition.
  - AASHTO, Roadside Design Guide, latest edition.
  - AASHTO, Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, latest edition.

All work shall be performed in a neat and professional manner. The Contractor shall remove debris and trash from work areas during construction. The Contractor shall restore areas to original condition and clean up all debris after construction.

#### DAMAGE TO EXISTING FACILITIES

The Contractor shall be responsible for locating all underground utilities prior to excavation. The contractor shall repair damage caused to any public or private facilities at his expense. Utilities include but are not limited to telephone, power, water, gas, fiber optic cable, underground vaults, roadway lighting wiring, traffic signal wiring, and roadway drainage systems.

#### MATERIALS LIST

The contractor shall provide an equipment list in Microsoft Excel format to the Engineer containing the following information:

- Type of equipment
- Field location
- Make
- Model
- Serial number
- Date of purchase
- Manufacturer contact information
- Equipment vendor contact information (if different)
- Date of Installation
- Date warranty expires

This list shall be provided to the Division of Traffic Operations prior to burn-in testing.

#### WARRANTY

The Contractor shall provide a copy of all equipment warranty information to the Division of Traffic Operations. The Contractor shall provide documentation from the manufacturer that ownership of the warranty is transferred to the following:

Kentucky Transportation Cabinet  
Division of Traffic Operations  
200 Mero Street  
Frankfort, KY 40622

#### TESTING

The Contractor shall demonstrate proper functioning of all devices at the field cabinets.

A 30 day equipment burn-in test will begin after each device is accepted. If a device fails during the 30 burn-in day test the Contractor shall repair or replace the device and demonstrate that the device is functioning at the field cabinet and a new 30 day burn-in test will begin for that device. Each device will be accepted after it has successfully completed its 30 day test. The 30 day burn-in test will be conducted by TOC personnel

in Frankfort from the operations center and consist of operational control of PTZ and video of the remote camera location and sign control.

**SHOP DRAWINGS**

All items that are used on this project shall have shop drawings sent to Engineer, who will contact Division of Traffic Operations for approval. All items shall be approved before purchase of said items.

**AS-BUILT DRAWINGS**

The Contractor, at the completion of the project, shall submit as-built drawings. As-built drawings shall be submitted in electronic format such as .pdf, .tiff, .dgn or other standard image format acceptable to the Engineer. As-built drawings may be scanned from marked up field plans or drawn in MicroStation. As-built drawings shall be scanned at a resolution that will allow them to be clearly legible on a computer display. As-built drawings shall include the exact location of all above ground equipment, underground conduit, wire, sensors and other equipment. Drawings shall indicate any changes to the design including changes to the numbers of conductors, wire gage, splices, additional conduit, etc. Conduit locations shall be drawn to scale or shall be dimensioned and referenced to permanent roadway features. Turns in conduit shall be referenced so that the conduit paths may be derived from the as-built drawings. Existing underground utilities shall be indicated on the drawings. Two copies of the drawings shall be submitted. One copy of the drawings shall be submitted to the Engineer. One copy of the drawings shall be submitted to the KYTC Division of Traffic Operations Design Services Branch. The Contractor shall correct any drawings that are deemed unacceptable to the Engineer. As-built drawings shall be delivered prior to burn-in testing.

**COMMUNICATIONS CABLE**

**DESCRIPTION**

Furnish and install Communications Cable in accordance with the plans, specifications and Standard Drawings.

**MATERIALS**

Communications cable shall be General Cable GenSpeed 5000 CAT 5e Outside Plant Cable 8 wire PN: 5136100 or approved equal. The cable shall meet or exceed the following specifications:

Performance:

- ANSI/TIA/EIA 568B (Category 5e)
- MIL-C-24640A Water Penetration
- Propagation Delay: 583 ns @ 100 MHz
- Return Loss @ 100 MHz: 20.1 DB
- Frequency Range: 1-350 MHz

Physical characteristics:

- Nominal Outside Diameter: 0.230 in
- Insulation Type: Polyolefin
- Maximum Pulling Tension: 25 lbs
- Maximum DC Resistance: 9.38 Ohms/100m
- Mutual Capacitance @ 1kHz: 17 pF/100m
- Operating Temperature: -45° C to 80° C

All connectors, terminators, fittings, etc. shall be incidental to the cost of installing the Communications Cable and no separate payment will be made.

## **INSTALLATION**

The Contractor shall install all cable and wire splice-free from the controller/service location to each cabinet, VMS sign, or CCTV camera the cable or wire is feeding. The Contractor shall not use excessive force when pulling wire through duct. The Contractor shall replace all wire damaged during installation. The Contractor shall submit to material testing at the discretion of the Engineer.

## **METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Communications Cable will be measured for payment per unit linear foot. The Department will make payment for complete, functioning, inspected, and accepted quantities. The Department will consider payment as full compensation for all work required under this section.

## **FIBER OPTIC CABLE AND FIBER TERMINATION RACK**

### **DESCRIPTION**

Furnish and install Fiber Optic Cable and Fiber Termination Rack in accordance with the plans, specifications and Standard Drawings.

### **MATERIALS**

The Contractor shall install specified fiber optic cable and distribution equipment using the stated installation procedures. The fiber termination rack shall include rack enclosure (Corning Fiber CCH01 or approved equal), panel modules 12 fiber (Corning Fiber CCHCP1259 or approved equal), and single mode patch cords (Corning Fiber VDX9YY53FIS or approved equal).

This shall include furnishing and installing all materials, mounting hardware, and cabling necessary to construct a complete and functional system. This shall also include all labor, tools, equipment, and incidentals necessary to complete the work, including but not limited to integrated fiber optic termination units, connector modules, jumper cables, testing, and documentation.

Fiber optic cable shall be Corning Optical Cable AQ048M1F-DWB-BK or approved equal. Fiber optic cable, jumper cables, and distribution equipment shall be fabricated by a certified ISO 9001 manufacturer.

All fiber cable provided under this contract shall be from the same manufacturer utilizing identical specifications. Fiber cables shall be dielectric (constructed from non-metallic materials). Fiber cables shall contain single mode optical fibers, loose tube single jacket armored, filled with a water-blocking material, UV resistant, and shall be suitable for installation in underground conduit, overhead installation, and field cabinets. The fiber optic shall not be self-supporting type.

The change in attenuation for single-mode from 0° F to -150° F shall not exceed 0.3 dB/km at 1550 nm.

The cable design shall have a life expectancy of 20 years when installed to manufacturer's specifications.

Optical fibers shall be contained inside a loose buffer tube. Each buffer tube shall contain 48 fibers. The buffer tubes shall allow free movement of the fibers without fiber damage during installation or normal operation, including expansion and contraction of the buffer tubes. The diameter of all buffer tubes in a cable shall match.

The cable shall have a central member designed to prevent buckling of the cable.

The cable core interstices shall be filled with a non-nutritive to fungus, electrically non-conductive, water-blocking material such as water-swellaable tape that is dry to the touch. The water blocking material shall be free from dirt and foreign matter.

The cable shall contain a least one ripcord under the sheath for easy sheath removal.

The cable shall be dielectric (with no armoring) and be either HDPE or MDPE. Jacketing material shall be applied directly over the tensile strength members and water-blocking material.

The markings on the fiber optic cable shall include cable length markings.

The fiber optic cable shall be capable of withstanding the following conditions without damage or decrease in function:

- Cable freezing per EIA/TIA-455-98
- Total immersion in water with natural mineral and salt contents
- Salt spray or salt water immersion for extended periods
- Wasp and hornet spray

It should meet the following standards:

- ITU-T G.652 (tables A, B, C, and)
- IEC 60793-2-50 type b1.3
- ISO 11801 052
- TIA/EIA 492-CAAD

- Telcordia GR-20-CORE

Cable shall be furnished in one continuous length per reel and shall be free from optical splices. A minimum length of six feet on each end of the cable shall be accessible for testing.

Information either stenciled or lettered on the reel or provided on a weatherproof tag firmly attached to the reel shall include the following:

- Factory order number
- Job number
- Ship date
- Manufacturer's cable code
- Type of cable (single mode, outdoor, indoor)
- Beginning and ending length markings
- Measured length and attenuation

#### FIBER OPTIC DISTRIBUTION EQUIPMENT:

SC type Connectors shall used. The measured attenuation of the connector (inclusive of coupler and mated test connector) shall not exceed an average of 0.3 dB for all connectors provided. Any connector found in excess of 0.5 dB will be rejected. Reflectance shall be less than -40 dB, from 14° F to +140° F. The manufacturer shall have a program that periodically tests connectors to ensure that, after 1000 re-matings, the attenuation shall not change more than 0.2 dB.

The connector shall be able to withstand an axial pull of 25 lbs. with no physical damage to the connector and no permanent optical degradation more than 0.3 dB. Connectors shall be pre-wired by the manufacturer.

Fiber optic jumper cables shall, at a minimum, comply with the following requirements:

- Have less than 0.2 dB loss when subjected to EIA/TIA-455-1A, 300 cycles, 0.5 kg
- Have an Aramid yarn strength member
- Have a rugged PVC sheathing
- Have a minimum bend radius of 12.5 inches following installation, 25 inches during installation
- Have a minimum tensile strength of 100 lbs
- Have connectors with strain relief pre-wired by the manufacturer
- Comply with NEC requirements for indoor fiber optic cable

Jumper cables shall be either single or duplex. Duplex jumper cables shall have permanent markings to distinguish between the fibers or connectors.

Connector modules shall consist of a connector panel, couplers, and a protective housing. The measured attenuation of the connector module (inclusive of coupler, fiber, and mated ST test connector) shall not exceed an average of 0.3 dB for all connector

modules provided. Any connector module found in excess of 0.5 dB will be rejected. Connector modules shall, at a minimum, comply with the following:

- Have 6 couplers for ST applications
- Have 12 couplers for SC applications
- Have a durable housing that provides physical protection and strain relief for the termination of multi-fiber cable to couplers
- Be easily installed and removed from the termination housing
- Be furnished with protective covers for couplers on the jumper cable side
- Comply with NEC requirements for indoor fiber optic cable

There shall be a fixed correlation between each buffered fiber color and coupler position for all connector modules. Fiber color shall meet the requirements for outdoor fiber optic cable.

Fiber optic termination units shall be properly sized for the required number of terminations subject to the minimum requirements stated for each configuration. The fiber optic termination units shall, at a minimum, comply with the following requirements:

- Be rack mounted
- Have front and rear doors or removable panels
- Have a top, bottom, and 4 sides that fully enclose the interior and protect its contents from physical damage
- Be manufactured using 16 gauge aluminum or equivalent and corrosion resistant
- Have provisions for neatly routing cables, buffer tubes and fan-out tubing
- Have cable management brackets or rings integral to the unit to secure and route cables from the connector modules to the vertical rack members while maintaining a minimum 1.5 inch cable radius

## **INSTALLATION**

Fiber optic cable shall be installed on existing utilities poles along US 31W and underground near Citation Road as shown on attached route layout. Fiber optic cable shall be installed in accordance with the manufacturer's installation techniques and procedures. The Contractor shall furnish and install all jumper cables and termination equipment necessary to connect fiber optic cable to the equipment. The fiber optic shall be connected to each pole with a hanger that will have a rubber grommet to protect the cable.

The Contractor shall install fiber optic cable as a continuous run, without splices, between the cable ends identified. The Contractor shall label fiber optic cables at each end of the cable run, at the points where the cable enters and exits the cabinet for mid-cable access locations, and in all junction boxes. Labels for fiber optic cable shall identify the cable number and the string numbers of the fiber contained within the cable.

Installation of fiber optic cable and jumper cables shall meet the minimum requirements of local building codes and NEC Article 770. Cable shall not be pulled along the ground, over or around obstructions, over edges or corners, or through unnecessary curves or bends. Bend radius criteria of 10 times the cable diameter no stress and twenty times cable diameter under stress shall not be exceeded. Manufacturer-approved pulling grips, cable guides, feeders, shoes, and bushings shall be used to prevent damage to cable during installation.

When cable is removed from the reel prior to installation, it shall be placed in a “figure-eight” configuration to prevent kinking or twisting. Care shall be taken to relieve pressure on the cable by placing cardboard shims at each crossover, by creating additional “figure-eights”, or by an approved equivalent method.

Prior to the installation of any fiber optic cable in conduit or overhead, the Contractor shall provide the cable manufacturer’s recommended and maximum pulling tensions to the Engineer. Included with these pulling tensions shall be a list of the cable manufacturer’s approved pulling lubricants. Lubricants shall be used in quantities and in accordance with the procedures recommended by the lubricant manufacturer.

Prior to the installation of any fiber optic cable in conduit or overhead, all cable pulling equipment shall be approved by the Engineer. The cable pulling equipment shall include a meter to display pulling tension and a mechanism to ensure that the maximum allowable pulling tension cannot be exceeded at any time during installation.

The Contractor shall furnish attachment hardware, installation guides, and other necessary equipment, not specifically listed herein, as required to install the fiber optic cable.

Fiber optic cable in junction boxes shall be properly looped and attached to the sidewall.

Slack fiber optic cable shall be coiled, labeled, and attached to cable guides.

All fibers, including spares, shall be installed from the connector modules, terminated at the appropriate fibers, and secured neatly within the termination rack.

Fiber terminations shall be neatly and permanently labeled on the connector modules to designate transmit or receive.

Blank connector panels shall be of the same finish and manufacture as the connector modules and shall be installed for all unused connector module spaces.

Prior to the installation of jumper cables, the Contractor shall provide and maintain protective covers over the optical connectors and terminations. Protective covers on unused terminations shall remain.



Jumper cables shall be installed from connector modules to end equipment, and from end equipment to end equipment in multiple cabinet configurations. Jumper cables shall be secured to provide strain relief at both the connector module and the end equipment. Manufacturer recommended installation and minimum bend radius requirements shall be adhered to. Jumper cables shall be labeled at both ends.

Any approved splices shall be made using the fusion splice technique and shall not induce more than 0.1 dB attenuation for each splice nor 0.07 dB averages for all splices. Splices that exceed 0.1 dB attenuation shall be re-spliced by the Contractor at no additional cost.

## TESTING

Fiber optic cables shall be tested by the manufacturer in conformance with the procedures of TIA/EIA-526-7A. Submittal of test data shall include a summary sheet that clearly illustrates measured loss versus budgeted loss. Each test result on the summary sheet shall be identified by cable number(s) and begin and end locations. The Contractor shall identify any unacceptable losses and perform corrective work at no additional cost. The maximum permissible loss for cables other than jumpers, terminations, and connector modules is 0.05 dB. Any cable not compliant shall be replaced in its entirety and re-tested for compliance. A copy of the final, summarized, post-installation test results shall be placed in a protective sleeve approved by the Engineer and attached to the rack or door.

Bi-directional (OTDR) tests shall be conducted by the manufacturer for all string paths. The OTDR tests shall document the loss for each component (connector module, jumper cable, etc.). Short runs of fiber shall be tested using a 'lead-in' cable or an 'attenuator' to obtain proper readings from the OTDR. OTDR traces shall be submitted. Each test shall be clearly annotated with the measured loss identified on the OTDR trace. All tests over 0.05 dB shall be identified on the summary sheet.

## METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Fiber Optic Cable will be measured for payment per unit linear foot. Termination Fiber Rack will be measured for payment per unit each. The Department will make payment for complete, functioning, inspected, and accepted quantities. The Department will consider payment as full compensation for all work required under this section.

## SURGE DEVICES

### DESCRIPTION

Furnish and install video surge device, data surge device, power surge device, and RF surge device in accordance with the plans, specifications and Standard Drawings.

### MATERIALS

#### GENERAL

Each surge device shall be compatible with the equipment it is protecting. Each surge device shall include cables, connectors, power supplies, and all incidentals required for operation.

#### VIDEO SIGNAL COAX CONDUCTOR SURGE DEVICE

Video Signal Coax Conductor Surge Device shall be EDCO CX12-BNC-Y or approved equal. This surge protector shall:

- Have a clamping voltage response time of less than one nanosecond
- Have a maximum clamping voltage of 12 volts when subjected to a 3 kA, 8x20 microsecond wave
- Have a peak surge current of 20kA with 8x20 microsecond wave
- Have BNC connectors
- Pass signals from DC to 80 MHz with less than 3 dB insertion losses
- Be UL 497B listed

#### DATA SIGNAL CONDUCTOR SURGE DEVICE

Data Signal Conductor Surge Device shall be for RS 422 and RS 485 Communication conductors shall be EDCO PC642C-015 or approved equal. This surge protector shall:

- Have a clamping voltage response time of less than one nanosecond
- Have a maximum clamping voltage of 12 volts when subjected to a 1 kA 8x20 microsecond wave
- Have a peak surge current per wire of 10 kA with 8x20 microsecond wave
- Have a maximum inline resistance of 6 ohms
- Have a maximum attenuation of -3db at 50MHz

#### RS 232 COMMUNICATION DATA SIGNAL CONDUCTOR SURGE DEVICE

Data Signal Conductor Surge Device for RS 232 Communication conductors shall be EDCO PC642C-015 or approved equal. This surge protector shall:

- Have a clamping voltage response time of less than one nanosecond
- Have a maximum clamping voltage of 30 volts when subjected to a 1 kA 8x20 microsecond wave
- Have a peak surge current per wire of 3kA with 8x20 microsecond wave
- Have a maximum inline resistance of 6 ohms
- Have a maximum attenuation of -3 db at 0.5 MHz

#### 100 BASE-T AND 10 BASE-T COMMUNICATION DATA SIGNAL CONDUCTOR SURGE DEVICE

Data Signal Conductor Surge Device for 100BaseT and 10BaseT Communication conductors shall be EDCO LCDP-30 or approved equal. This surge protector shall:

- Have a clamping voltage response time of less than one nanosecond
- Have a maximum clamping voltage of 30 volts when subjected to a 0.5 kA 8x20 microsecond wave
- Have a peak surge current per wire shall be 1kA with 8x20 microsecond wave

- Have a maximum attenuation shall be -3db at 100 MHz
- Have a N.E.X.T. worst pair of better than -40 db at 100 MHz
- Have a maximum attenuation of -3db at 0.5 MHz

#### POWER CONDUCTOR SURGE DEVICE

Conductor Surge Device for power carrying conductors shall be EDCO SHA-1210 or approved equal. This surge protector shall meet or exceed the following specifications:

- Nominal Line Voltage 120 V
- Peak Current 20,000 Amps
- Clamp Voltage 280 volt typical @ 20kA
- Response time <5ns
- Continuous Service Current 10 Amps max. 120 VAC, 60 Hz

#### RF ANTENNA COAX CONDUCTOR SURGE DEVICE

RF Antenna Coax Conductor Surge Devices shall meet all manufacturer recommendations for the particular use of the radio antenna coax conductors.

#### INSTALLATION

The Contractor shall supply surge devices in model 332 enclosures as specified on layout sheets. Surge devices shall be located in said equipment such that they are easily accessible for maintenance activities.

#### METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Surge Device will be measured for payment per unit each. The Department will make payment for complete, functioning, inspected, and accepted quantities. The Department will consider payment as full compensation for all work required under this section.

### TRANSCEIVERS

#### DESCRIPTION

Furnish single channel video over fiber transceiver and single channel data over fiber transceiver to be located in cabinets.

#### MATERIALS

##### SINGLE CHANNEL DATA OVER FIBER TRANSCEIVER

Single Channel Data over Fiber Transceiver shall be IFS, DE7200-S or approved equal.

All fiber optic transceivers shall be supplied from a single manufacturer.

Fiber optic Ethernet media converters shall be provided. The system shall provide real-time 10/100 Base-T and 100 Base-FX performance. The transceiver shall be used as an Ethernet media converter supporting one Ethernet 100 Base-T electrical port and one Ethernet 100 Base-FX optical port. The transceiver shall have auto MDI/MDI-X operation that has the capability of being forced on. The transceiver shall be fully

compatible with all standard IEEE 802.3, 802.3u, and 802.3x Ethernet protocols. The transceiver shall have an enhanced mode to provide the back-off algorithm changed from IEEE standard 802.3 binary exponential to aggressive mode, enable half-duplex back-pressure, disable excessive collision drop, and enable jumbo frame for streaming media applications. The transceiver requirements shall be two single mode optical fiber. The transceiver shall have a substantially wide dynamic range so as to never require optical or electrical adjustments. Optical attenuators shall never be required. The transceiver shall provide local diagnostic indicators. The transceiver shall support a remote network management option providing full interoperability with industry standard SNMP/IP protocols. All transceivers shall be available in both card mount and surface mount versions. All transceiver shall have automatic, resettable, polymer fuses on all power rails that shall provide for automatic reset, as well as, transient suppression on all data I/O connections. All card mount transceivers shall have an internal DC power supply. A short circuit in one module shall not affect the operation of other modules powered from the common power supply. All card mount transceivers shall have the ability to be inserted into and removed from the communication management chassis without interrupting power and with no risk of damage to other modules or the communications management chassis during replacement. The system shall have an ambient operating temperature of -40°C to +74°C, an ambient storage temperature of -40°C to +85°C, a relative humidity ability of 0% to 95% (non-condensing), have an option for conformal coating, and a MTBF of > 100,000 hours. The transceiver shall meet or exceed NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Specifications for operating temperature, humidity, mechanical shock, vibration, and voltage transient protection. The transceiver radiated emissions shall be compliant with FCC Part 15, Class B, and EN55022 specifications. The transceiver shall use lasers that are compliant with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations Subchapter J.

SPECIFICATIONS

Data: One (1) channel, bi-directional

DATA SPECIFICATIONS

- Data Protocol: Ethernet
- Operating Mode: Half or full-duplex
- Enhanced or standard IEEE 802.3
- Data Rate: 10/100 Mbps
- Ethernet Compliance: IEEE 802.3, 802.3u, 802.3x
- Ethernet Isolation: 1500 VRMS, One (1) minute

OPTICAL SPECIFICATIONS

- Fiber Type: Single mode
- Wavelength: 1300/1550nm
- Number of Fibers: Two

- Optical Emitter Type: Laser
- Transmitter Output Power: 500 $\mu$ w (-3 dBm)
- Receiver Sensitivity: 5 $\mu$ w (-23 dBm)
- Optical Power Budget: 20 dB

#### STATUS INDICATOR SPECIFICATIONS

- Power
- Data Rate
- Auto-Negotiate
- Operating Modes
- Optical Link Detect

#### SINGLE CHANNEL VIDEO OVER FIBER TRANSCEIVER

Single Channel Video over Fiber Transceiver shall be IFS VADT/VADR 14130WDM or approved equal.

All fiber optic modules shall be supplied from a single manufacturer.

Digital fiber optic video and data transmitters and receivers shall be provided as required. The transceiver shall transmit a one-way, single channel of high resolution, true broadcast quality, real-time NTSC or PAL color video. The transceiver shall employ 10-bit digital encoding for transmission of these signals. The transceiver shall meet the RS-250C short-haul standard for video transmission. The transceiver shall provide bi-directional data supporting RS-232, RS-422, or 2 or 4-wire RS-485 data interfaces. The transceiver shall be transparent to all major data protocols (i.e., Manchester Encoding, Bi-Phase, NRZ, NRZI, etc.). The transceiver requirements shall be one single mode optical fiber. The transceiver shall have a substantially wide dynamic range so as to never require optical or electrical adjustments. Optical attenuators shall never be required. The transceiver shall provide local diagnostic indicators. The transceiver shall support a remote network management option providing full interoperability with industry standard SNMP/IP protocols. All transceivers shall be available in both card mount and surface mount versions. All transceivers shall have automatic, resettable, polymer fuses on all power rails that shall provide for automatic reset, as well as, transient suppression on all video and data I/O connections. All card mount transceivers shall have an internal DC power supply. A short circuit in one module shall not affect the operation of other modules powered from the common power supply. All card mount transceivers shall have the ability to be inserted into and removed from the communication management chassis without interrupting power and with no risk of damage to other modules or the communications management chassis during replacement. The transceiver shall have an ambient operating temperature of -40°C to +74°C, an ambient storage temperature of -40°C to +85°C, a relative humidity ability of 0% to 95% (non-condensing), have an option for conformal coating, and a MTBF of > 100,000 hours. The transceiver shall meet or exceed NEMA TS-1/TS-2 Equipment Specifications for operating temperature, humidity, mechanical shock, vibration, and voltage transient protection. The transceiver

radiated emissions shall be compliant with FCC Part 15, Class B, and EN55022 specifications. The transceivers shall use lasers that are compliant with FDA Performance Standard for Laser Products, Title 21, and Code of Federal Regulations Subchapter J.

## SPECIFICATIONS

Video: One (1) channel, one-way

Data: One (1) channel, bi-directional, RS-232, RS-422, or 2 or 4-wire RS-485

## VIDEO SPECIFICATIONS

- I/O: 1 volt pk-pk (75 ohms)
- Bandwidth: 5Hz – 10 MHz
- Differential Gain: < 2%
- Differential Phase: < 0.7°
- Tilt: < 1%
- Signal-to-Noise Ratio (SNR): 67 dB @ maximum optical loss budget

## DATA SPECIFICATIONS

- Data Interface: RS-232, RS-422, or 2 or 4-wire RS-485
- Data Format: NRZ, NRZI, Manchester, Bi-Phase
- Data Rate: DC – 230 kbps (NRZ)
- Bit Error Rate (BER): < 1 x 10<sup>-9</sup> @ maximum optical loss budget
- Operating Mode: Simplex or full-duplex

## OPTICAL SPECIFICATIONS

- Fiber Type: Single Mode
- Wavelength: 1300/1550nm
- Number of Fibers: One
- Optical Emitter Type: Laser
- Transmitter Output Power: 600μw (-2 dBm)
- Receiver Sensitivity: 3μw (-25 dBm)
- Optical Power Budget: 23 dB

## STATUS INDICATOR SPECIFICATIONS

- Power
- Video Sync
- Data Receive
- Data Transmit
- Optical Link Detect

This item includes cables, connectors, power supplies, and all incidentals required for operation.

## **INSTALLATION**

The Contractor shall single channel data over fiber transceivers and single channel video over fiber transceivers in Model 332 enclosures as specified on layout sheets. The Contractor shall be responsible for the transceivers working properly with other equipment.

## **METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Single Channel Data over Fiber Transceiver will be measured for payment per unit each. The Department will make payment for complete, functioning, inspected, and accepted quantities. The Department will consider payment as full compensation for all work required under this section.

## **MAKE READY FIBER OPTIC WORK**

### **DESCRIPTION**

This the work require by LGE (other utilities) to install the fiber optic cable on the existing utilities pole to meet NESC.

### **PLAN**

The contractor shall contact LGE representative to find out what is require for the “make ready” work for the installation of the fiber optic cable on the existing utility poles. This may require the contractor to sign a contract with LGE for the “make ready” work require for this project. LGE will supply the detail route plan and detail “make ready” changes that will need to be done by the contractor or LGE personnel. The contractor may have to pay LGE a fee for the detail “make ready” plan for the fiber optic cable. The contact for LGE will tell you if LGE personnel will be doing the “make ready” changes or they will let the contractor do this work. The contractor will be responsible for paying LGE if LGE personnel do this work. If the contractor does the “make ready” changes, they must be a certified LGE contractor to do this work. LGE contact: Tim Vanderhoof, Design Technician, 502-333-1821, 502-664-9579.

### **MATERIALS**

All “make ready” materials for the electrical portion will be supplied by LGE. These materials will have to be purchased from LGE through the contract signed by the contractor and LGE. All other materials for communications “make ready” changes will be furnished by the contractor.

### **INSTALLATION**

The contractor shall adhere to all NESC code requirements and all requirements set by LGE and any other utility along the route for the fiber optic installation.

### **METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Make ready fiber optic work will be measured for payment as a lump sum. The Department will make payment for complete, functioning, inspected, and accepted

quantities. The Department will consider payment as full compensation for all work required under this section.

## **GLOSSARY**

The following acronyms, abbreviations, and definitions shall govern this specification:

- AASHTO – American Association of State Highway and Transportation Officials
- ABS - Acrylonitrile Butadiene Styrene
- AC – Alternating Current
- AlInGaP – Aluminum Indium Gallium Phosphide (refers to the chemical composition of an LED).
- ANSI – American National Standards Institute
- ASCII – American Standard Code for Information Interchange
- ASN.1 – Abstract Syntax Notation 1
- ASTM – American Society for Testing and Materials
- AWG - American Wire Gauge
- AWS – American Welding Society
- BCD – Binary Coded Decimal
- B frames – Bi-directional Predicted Frames
- BGP – Border Gateway Protocol
- Bin – Group of LEDs categorized and sorted by intensity or color. Each bin has upper and lower intensity or color specifications and contains only LEDs that are measured to be within that range. LED manufacturers sort LEDs into bins to ensure consistent intensity and color properties.
- BOOTP – Bootstrap Protocol
- CALTRANS – California Department of Transportation
- CAN – Control Area Network
- CCTV – Closed Circuit Television
- CDPD – Cellular Digital Packet Data
- CLI – Command Line Interface
- CNC – Computer Network Control
- Control Computer – A desktop or laptop computer used in conjunction with VMS control software to communicate with VMS sign controllers. The control computer can instruct a VMS sign controller to program and control the VMS, monitor VMS status, and run VMS diagnostic tests. A control computer can be used for remote control of one or more VMS, as well as for local control of a single VMS
- DC – Direct Current
- DHCP – Dynamic Host Configuration Protocol
- DMS – Dynamic Message Sign. An industry term that applies to various types of changeable sign technology
- DVI-D – Digital Visual Interface - Digital
- EIA – Electronic Industries Association



- ELFEXT – Equal Level Far End Crosstalk
- EPA – Effective Projected Area
- FCC – Federal Communications Commission
- FDA – Food and Drug Administration
- Font – The style and shape of alphanumeric characters that are displayed on the VMS matrix to create messages viewed by motorists and travelers
- Frame – see *Page*
- FSORS – Full, Standardized Object Range Support – an NTCIP term. See the NTCIP standards for additional information.
- GUI – Graphical User Interface
- HDPE – High Density Polyethylene
- HHR – Half Horizontal Resolution
- HTTP – Hypertext Transfer Protocol
- IEEE – Institute of Electrical and Electronic Engineers
- I frames – Intra-frames
- IC – Integrated Circuit
- IGMP
- InGaAlP – Indium Gallium Aluminum Phosphide
- I/O – Input/Output
- IP – Internet Protocol – in transceivers
- IRE – Institute of Radio Engineers
- ISO – International Organization for Standardization
- ITE – Institute of Transportation Engineers
- ITS – Intelligent Transportation System
- Kbps – Kilobits per second
- KYTC – Kentucky Transportation Cabinet
- LAN – Local Area Network
- LCD – Liquid Crystal Display
- LED – Light Emitting Diode
- MDPE – Medium Density Polyethylene
- Message – Information displayed on the VMS for the purpose of visually communicating with motorists. A VMS message can consist of one or more pages of data that are displayed consecutively
- MIB – Management Information Base
- Module – Assembly consisting of a two-dimensional LED pixel array, pixel drive circuitry, and mounting hardware. Modules are installed in the display adjacent to each other to form the display matrix.
- MTBF – Mean Time Between Failures
- MPEG – Moving Picture Experts Group
- NEC – National Electrical Code
- NEMA – National Electrical Manufacturers Association
- NESC – National Electrical Safety Code
- NEXT – Near End Crosstalk

- NCHRP – National Cooperative Highway Research Program
- NRZ – Non Return to Zero
- NRZI – Non Return to Zero Inverted
- NTCIP – National Transportation Communications for ITS Protocol
- NTSC - National Transmission Standards Committee
- Object – An NTCIP term referring to an element of data in an NTCIP-compatible device that can be manipulated to control or monitor the device.
- OER – Octet Encoding Rules
- OSHA – Occupational Safety and Health Administration
- OTDR – Optical Time Domain Reflectometer
- Page – An NTCIP term referring to the data that is displayed on the VMS display matrix at a given moment in time. Also referred to as a frame.
- P frames – Forward Predicted Frames
- PCB – Printed Circuit Board
- Pixel – Picture element. The smallest changeable (programmable) portion of a VMS display matrix
- PMPP – Point to Multi-Point Protocol
- PPP – Point to Point Protocol
- PSELFEXT – Power Sum Equal Level Far End Cross Talk
- PSNEXT – Power Sum Near End Crosstalk
- PTZ – Pan/Tilt/Zoom
- PVC – Polyvinyl Chloride
- PWM – Pulse Width Modulation
- QSIF – Quarter Source Input Format
- RAM – Random Access Memory
- RARP – Reverse Address Resolution Protocol
- RGB – Red-Green-Blue
- Schedule – A set of data that determines the time and date when a VMS sign controller will cause a stored message to be displayed on the VMS
- SDRAM – Synchronous Dynamic Random Access Memory
- SIF – Source Input Format
- SNMP – Simple Network Management Protocol
- STMP – Simple Transportation Management Framework
- Stroke – Refers to the vertical and horizontal width of the lines and curves of a display font. Single stroke denotes character segments that are one pixel wide. Double stroke denotes character segments that are two pixels wide.
- TFTP – Trivial File Transfer Protocol
- TIA - Telecommunications Industry Association
- TMA – Truck Mounted Attenuator
- TOC – Traffic Operations Center
- UL – Underwriters Laboratories
- UPS – Uninterruptible Power Supply
- USB – Universal Serial Bus

- VLAN – Virtual Local Area Network
- VMS – Variable Message Sign. A type of VMS that is fully programmable such that the content of its messages are fully changeable remotely and electronically.
- VMS Controller – A stand-alone computer that is located at a VMS site, which controls a single VMS. A sign controller receives commands from and sends information to a control computer
- WAN – Wide Area Network
- WYSIWYG – What You See Is What You Get. More specifically, what you see on the VMS control computer monitor is a scaled representation of how a message will appear when it is being displayed on the VMS. Similarly, after a pixel diagnostic test routine has been run, what you see on the control computer monitor is a scaled representation of the functional status of each pixel in the VMS display matrix.



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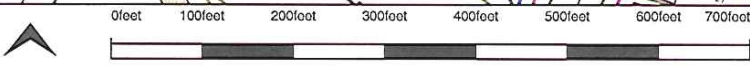
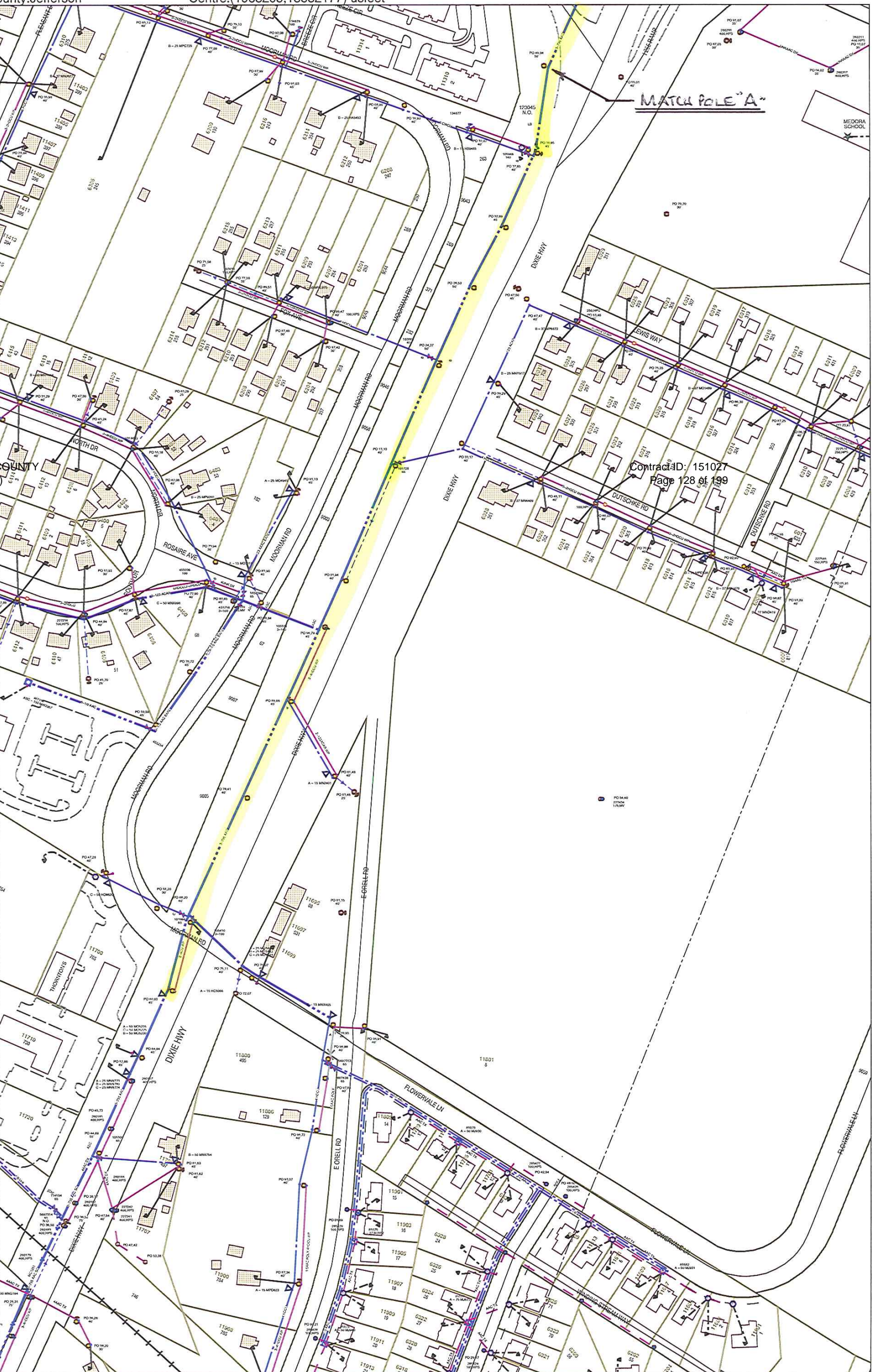
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STP 0311 (031)



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Vanderhoof, Tim

SHEET #1

Plot Date 04/30/2015



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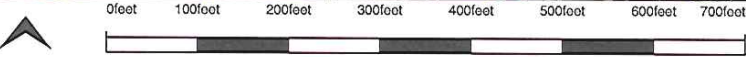
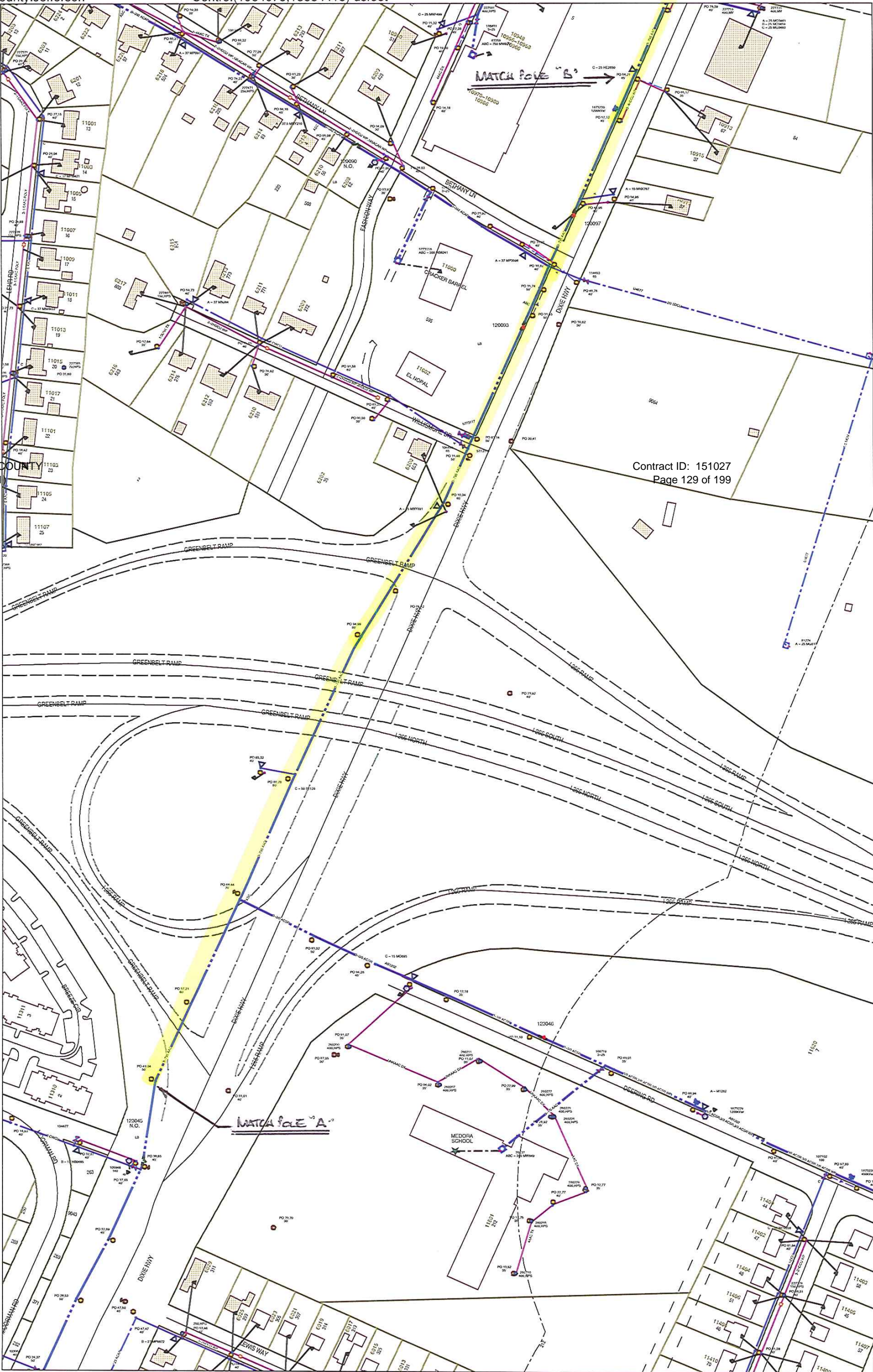
KY – VALLEY STATION NW 3 A A

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LG&E KU

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SHEET # 2



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County:Jefferson

Centre:(1965220,13836881) usfeet

KY – VALLEY STATION NW 1 C C

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MATCH POLE "B"

MATCH POLE "C"



LG&E KU

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County:Jefferson

Centre:(1966571,13839203) usfeet

KY – VALLEY STATION NW 1 C B

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L&E KU

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Sheet 4



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County:Jefferson

Centre:(1967560,13841463) usfeet

KY - VALLEY STATION NW 1 A D

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FIBER UNDERGROUND

MATCH POLE 'D'

Plot Date 04/30/2015



LG&E KU

Scale 1:2400

Vanderhoof, Tim

Page: 1

SHEET # S



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County: Jefferson

Centre: (1968880,13843799) usfeet

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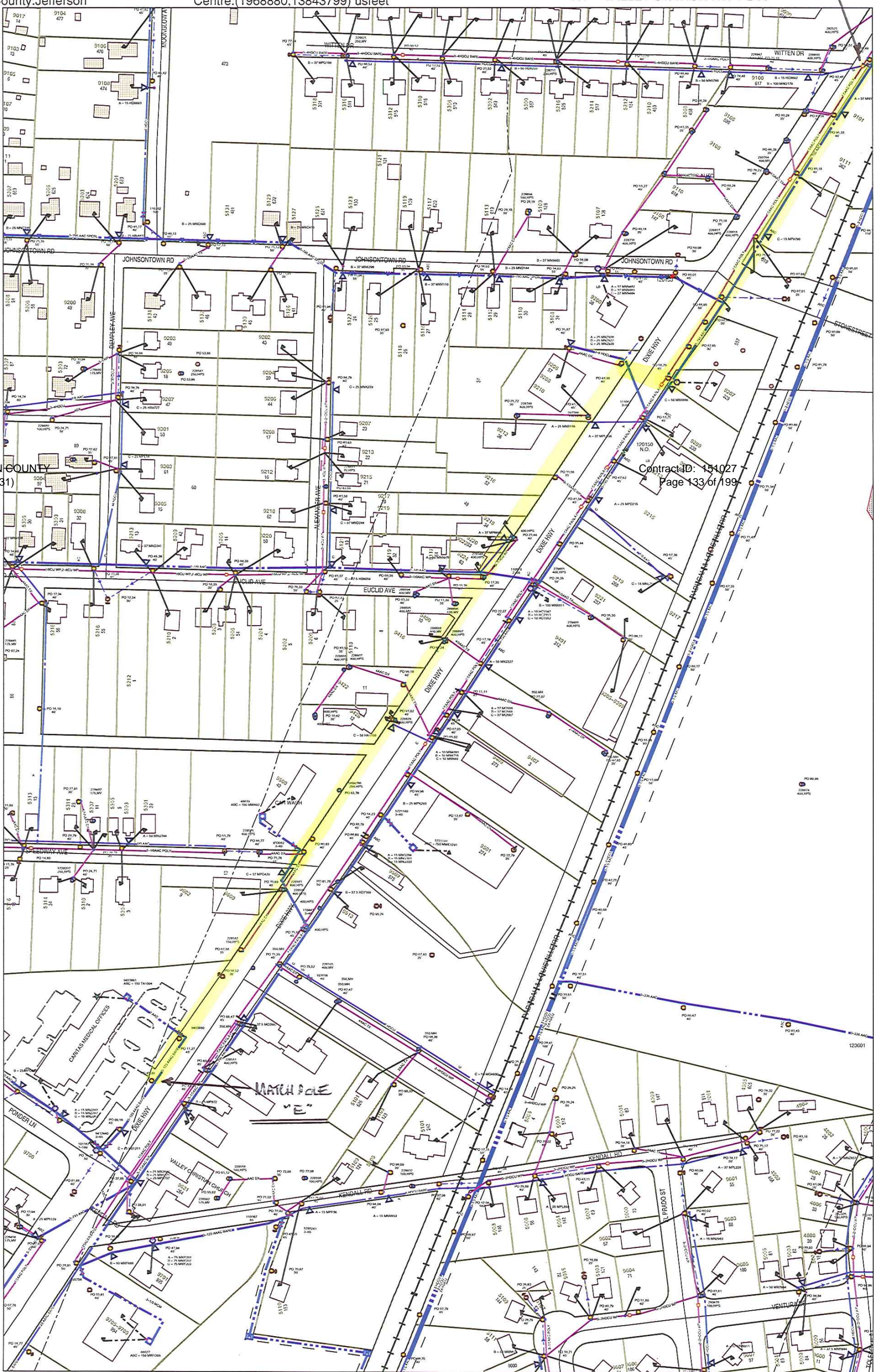
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County:Jefferson

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KY - LOUISVILLE WEST SW 3 D C

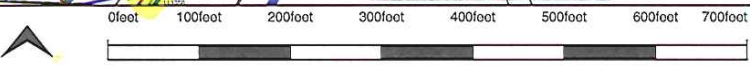
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Vanderhoof, Tim

SHEET 7



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County:Jefferson

Centre:(1972266,13848864) usfeet

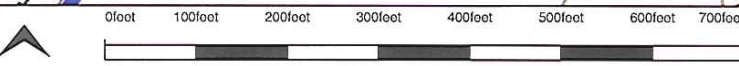
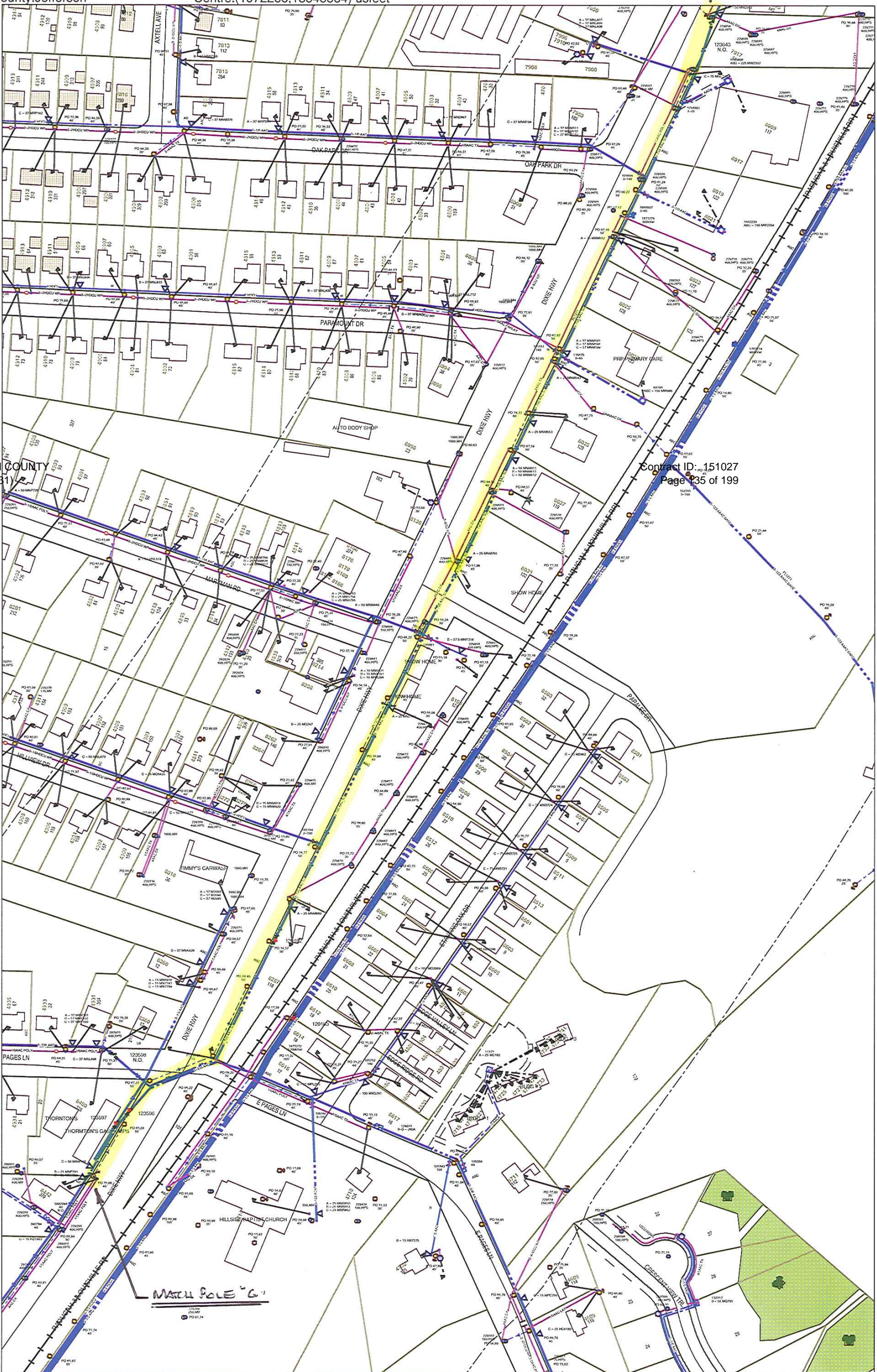
KY - LOUISVILLE WEST SW 3 D D

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**PART II**

**SPECIFICATIONS AND STANDARD DRAWINGS**

### **SPECIFICATIONS REFERENCE**

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2012* and *Standard Drawings, Edition of 2012 with the 2012 Revision*.

**Supplemental Specifications to the  
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<b>Subsection:</b>	102.15 Process Agent.
<b>Revision:</b>	Replace the 1st paragraph with the following: Every corporation doing business with the Department shall submit evidence of compliance with KRS Sections 14A.4-010, 271B.11-010, 271B.11-070, 271B.11-080, 271B.5-010 and 271B.16-220, and file with the Department the name and address of the process agent upon whom process may be served.
<b>Subsection:</b>	105.13 Claims Resolution Process.
<b>Revision:</b>	Delete all references to TC 63-34 and TC 63-44 from the subsection as these forms are no longer available through the forms library and are forms generated within the AASHTO SiteManager software.
<b>Subsection:</b>	108.03 Preconstruction Conference.
<b>Revision:</b>	Replace 8) Staking with the following: 8) Staking (designated by a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
<b>Subsection:</b>	109.07.02 Fuel.
<b>Revision:</b>	Revise item Crushed Aggregate Used for Embankment Stabilization to the following: Crushed Aggregate Used for Stabilization of Unsuitable Materials Used for Embankment Stabilization
	Delete the following item from the table. <del>Crushed Sandstone Base (Cement Treated)</del>
<b>Subsection:</b>	110.02 Demobilization.
<b>Revision:</b>	Replace the first part of the first sentence of the second paragraph with the following: Perform all work and operations necessary to accomplish final clean-up as specified in the first paragraph of Subsection 105.12;
<b>Subsection:</b>	112.03.12 Project Traffic Coordinator (PTC).
<b>Revision:</b>	Replace the last paragraph of this subsection with the following: Ensure the designated PTC has sufficient skill and experience to properly perform the task assigned and has successfully completed the qualification courses.
<b>Subsection:</b>	112.04.18 Diversions (By-Pass Detours).
<b>Revision:</b>	Insert the following sentence after the 2nd sentence of this subsection. The Department will not measure temporary drainage structures for payment when the contract documents provide the required drainage opening that must be maintained with the diversion. The temporary drainage structures shall be incidental to the construction of the diversion. If the contract documents fail to provide the required drainage opening needed for the diversion, the cost of the temporary drainage structure will be handled as extra work in accordance with section 109.04.
<b>Subsection:</b>	201.03.01 Contractor Staking.
<b>Revision:</b>	Replace the first paragraph with the following: Perform all necessary surveying under the general supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.

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<b>Subsection:</b>	201.04.01 Contractor Staking.
<b>Revision:</b>	Replace the last sentence of the paragraph with the following: Complete the general layout of the project under the supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
<b>Subsection:</b>	206.04.01 Embankment-in-Place.
<b>Revision:</b>	Replace the fourth paragraph with the following: The Department will not measure <b>suitable</b> excavation included in the original plans that is disposed of for payment and will consider it incidental to Embankment-in-Place.
<b>Subsection:</b>	208.02.01 Cement.
<b>Revision:</b>	Replace paragraph with the following: Select Type I or Type II cement conforming to Section 801. Use the same type cement throughout the work.
<b>Subsection:</b>	208.03.06 Curing and Protection.
<b>Revision:</b>	Replace the fourth paragraph with the following: Do not allow traffic or equipment on the finished surface until the stabilized subgrade has cured for a total of 7-days with an ambient air temperature above 40 degrees Fahrenheit. A curing day consists of a continuous 24-hour period in which the ambient air temperature does not fall below 40 degrees Fahrenheit. Curing days will not be calculated consecutively, but must total seven (7) , 24-hour days with the ambient air temperature remaining at or above 40 degrees Fahrenheit before traffic or equipment will be allowed to traverse the stabilized subgrade. The Department may allow a shortened curing period when the Contractor requests. The Contractor shall give the Department at least 3 day notice of the request for a shortened curing period. The Department will require a minimum of 3 curing days after final compaction. The Contractor shall furnish cores to the treated depth of the roadbed at 500 feet intervals for each lane when a shortened curing time is requested. The Department will test cores using an unconfined compression test. Roadbed cores must achieve a minimum strength requirement of 80 psi.
<b>Subsection:</b>	208.03.06 Curing and Protection.
<b>Revision:</b>	Replace paragraph eight with the following: At no expense to the Department, repair any damage to the subgrade caused by freezing.
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	A) Seed Mixtures for Permanent Seeding.
<b>Revision:</b>	Revise <b>Seed Mix Type I</b> to the mixture shown below: 50% Kentucky 31 Tall Fescue (Festuca arundinacea) 35% Hard Fescue (Festuca (Festuca longifolia) 10% Ryegrass, Perennial (Lolium perenne) 5% White Dutch Clover (Trifolium repens)
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	A) Seed Mixtures for Permanent Seeding.
<b>Number:</b>	2)
<b>Revision:</b>	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 4, 5, 6, and 7. Apply seed mix Type II at a minimum application rate of 100 pounds per acre. If adjacent to a golf course replace the crown vetch with Kentucky 31 Tall Fescue.



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<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	A) Seed Mixtures for Permanent Seeding.
<b>Number:</b>	3)
<b>Revision:</b>	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 1, 2, 3, 8, 9, 10, 11, and 12. Apply seed mix Type III at a minimum application rate of 100 pounds per acre. If adjacent to crop land or golf course, replace the Sericea Lespedeza with Kentucky 31 Fescue.
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	B) Procedures for Permanent Seeding.
<b>Revision:</b>	Delete the first sentence of the section.
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	B) Procedures for Permanent Seeding.
<b>Revision:</b>	Replace the second and third sentence of the section with the following: Prepare a seedbed and apply an initial fertilizer that contains a minimum of 100 pounds of nitrogen, 100 pounds of phosphate, and 100 pounds of potash per acre. Apply agricultural limestone to the seedbed when the Engineer determines it is needed. When required, place agricultural limestone at a rate of 3 tons per acre.
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	D) Top Dressing.
<b>Revision:</b>	Change the title of part to D) Fertilizer.
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	D) Fertilizer.
<b>Revision:</b>	Replace the first paragraph with the following: Apply fertilizer at the beginning of the seeding operation and after vegetation is established. Use fertilizer delivered to the project in bags or bulk. Apply initial fertilizer to all areas prior to the seeding or sodding operation at the application rate specified in 212.03.03 B). Apply 20-10-10 fertilizer to the areas after vegetation has been established at a rate of 11.5 pounds per 1,000 square feet. Obtain approval from the Engineer prior to the 2nd fertilizer application. Reapply fertilizer to any area that has a streaked appearance. The reapplication shall be at no additional cost to the Department. Re-establish any vegetation severely damaged or destroyed because of an excessive application of fertilizer at no cost to the Department.
<b>Subsection:</b>	212.03.03 Permanent Seeding and Protection.
<b>Part:</b>	D) Fertilizer.
<b>Revision:</b>	Delete the second paragraph.
<b>Subsection:</b>	212.04.04 Agricultural Limestone.
<b>Revision:</b>	Replace the entire section with the following: The Department will measure the quantity of agricultural limestone in tons.
<b>Subsection:</b>	212.04.05 Fertilizer.
<b>Revision:</b>	Replace the entire section with the following: The Department will measure fertilizer used in the seeding or sodding operations for payment. The Department will measure the quantity by tons.

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<b>Subsection:</b>	212.05 PAYMENT.		
<b>Revision:</b>	Delete the following item code:		
	<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
	05966	Topdressing Fertilizer	Ton
<b>Subsection:</b>	212.05 PAYMENT.		
<b>Revision:</b>	Add the following pay items:		
	<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
	05963	Initial Fertilizer	Ton
	05964	20-10-10 Fertilizer	Ton
	05992	Agricultural Limestone	Ton
<b>Subsection:</b>	213.03.02 Progress Requirements.		
<b>Revision:</b>	Replace the last sentence of the third paragraph with the following: Additionally, the Department will apply a penalty equal to the liquidated damages when all aspects of the work are not coordinated in an acceptable manner within 7 calendar days after written notification.		
<b>Subsection:</b>	213.03.05 Temporary Control Measures.		
<b>Part:</b>	E) Temporary Seeding and Protection.		
<b>Revision:</b>	Delete the second sentence of the first paragraph.		
<b>Subsection:</b>	304.02.01 Physical Properties.		
<b>Table:</b>	Required Geogrid Properties		
<b>Revision:</b>	Replace all references to Test Method "GRI-GG2-87" with ASTM D 7737.		
<b>Subsection:</b>	402.03.02 Contractor Quality Control and Department Acceptance.		
<b>Part:</b>	B) Sampling.		
<b>Revision:</b>	Replace the second sentence with the following: The Department will determine when to obtain the quality control samples using the random-number feature of the mix design submittal and approval spreadsheet. The Department will randomly determine when to obtain the verification samples required in Subsections 402.03.03 and 402.03.04 using the Asphalt Mixture Sample Random Tonnage Generator.		
<b>Subsection:</b>	402.03.02 Contractor Quality Control and Department Acceptance.		
<b>Part:</b>	D) Testing Responsibilities.		
<b>Number:</b>	3) VMA.		
<b>Revision:</b>	Add the following paragraph below Number 3) VMA: Retain the AV/VMA specimens and one additional corresponding G <sub>mm</sub> sample for 5 working days for mixture verification testing by the Department. For Specialty Mixtures, retain a mixture sample for 5 working days for mixture verification testing by the Department. When the Department's test results do not verify that the Contractor's quality control test results are within the acceptable tolerances according to Subsection 402.03.03, retain the samples and specimens from the affected subplot(s) for the duration of the project.		
<b>Subsection:</b>	402.03.02 Contractor Quality Control and Department Acceptance.		
<b>Part:</b>	D) Testing Responsibilities.		
<b>Number:</b>	4) Density.		
<b>Revision:</b>	Replace the second sentence of the Option A paragraph with the following: Perform coring by the end of the following work day.		

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<b>Subsection:</b>	402.03.02 Contractor Quality Control and Department Acceptance.
<b>Part:</b>	D) Testing Responsibilities.
<b>Number:</b>	5) Gradation.
<b>Revision:</b>	Delete the second paragraph.
<b>Subsection:</b>	402.03.02 Contractor Quality Control and Department Acceptance.
<b>Part:</b>	H) Unsatisfactory Work.
<b>Number:</b>	1) Based on Lab Data.
<b>Revision:</b>	Replace the second paragraph with the following: When the Engineer determines that safety concerns or other considerations prohibit an immediate shutdown, continue work and the Department will make an evaluation of acceptability according to Subsection 402.03.05.
<b>Subsection:</b>	402.03.03 Verification.
<b>Revision:</b>	Replace the first paragraph with the following: <b>402.03.03 Mixture Verification.</b> For volumetric properties, the Department will perform a minimum of one verification test for AC, AV, and VMA according to the corresponding procedures as given in Subsection 402.03.02. The Department will randomly determine when to obtain the verification sample using the Asphalt Mixture Sample Random Tonnage Generator. For specialty mixtures, the Department will perform one AC and one gradation determination per lot according to the corresponding procedures as given in Subsection 402.03.02. However, Department personnel will not perform AC determinations according to KM 64-405. The Contractor will obtain a quality control sample at the same time the Department obtains the mixture verification sample and perform testing according to the procedures given in Subsection 402.03.02. If the Contractor's quality control sample is verified by the Department's test results within the tolerances provided below, the Contractor's sample will serve as the quality control sample for the affected subplot. The Department may perform the mixture verification test on the Contractor's equipment or on the Department's equipment.
<b>Subsection:</b>	402.03.03 Verification.
<b>Part:</b>	A) Evaluation of Sublot(s) Verified by Department.
<b>Revision:</b>	Replace the third sentence of the second paragraph with the following: When the paired $t$ -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
<b>Subsection:</b>	402.03.03 Verification.
<b>Part:</b>	B) Evaluation of Sublots Not Verified by Department.
<b>Revision:</b>	Replace the third sentence of the first paragraph with the following: When differences between test results are not within the tolerances listed below, the Department will resolve the discrepancy according to Subsection 402.03.05.

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<b>Subsection:</b>	402.03.03 Verification.
<b>Part:</b>	B) Evaluation of Sublots Not Verified by Department.
<b>Revision:</b>	Replace the third sentence of the second paragraph with the following: When the <i>F</i> -test or <i>t</i> -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
<b>Subsection:</b>	402.03.03 Verification.
<b>Part:</b>	C) Test Data Patterns.
<b>Revision:</b>	Replace the second sentence with the following: When patterns indicate substantial differences between the verified and non-verified sublots, the Department will perform further comparative testing according to subsection 402.03.05.
<b>Subsection:</b>	402.03 CONSTRUCTION.
<b>Revision:</b>	Add the following subsection: <b>402.03.04 Testing Equipment and Technician Verification.</b> For mixtures with a minimum quantity of 20,000 tons and for every 20,000 tons thereafter, the Department will obtain an additional verification sample at random using the Asphalt Mixture Sample Random Tonnage Generator in order to verify the integrity of the Contractor's and Department's laboratory testing equipment and technicians. The Department will obtain a mixture sample of at least 150 lb at the asphalt mixing plant according to KM 64-425 and split it according to AASHTO R 47. The Department will retain one split portion of the sample and provide the other portion to the Contractor. At a later time convenient to both parties, the Department and Contractor will simultaneously reheat the sample to the specified compaction temperature and test the mixture for AV and VMA using separate laboratory equipment according to the corresponding procedures given in Subsection 402.03.02. The Department will evaluate the differences in test results between the two laboratories. When the difference between the results for AV or VMA is not within $\pm 2.0$ percent, the Department will investigate and resolve the discrepancy according to Subsection 402.03.05.
<b>Subsection:</b>	402.03.04 Dispute Resolution.
<b>Revision:</b>	Change the subsection number to 402.03.05.
<b>Subsection:</b>	402.05 PAYMENT.
<b>Part:</b>	Lot Pay Adjustment Schedule Compaction Option A Base and Binder Mixtures
<b>Table:</b>	AC
<b>Revision:</b>	Replace the Deviation from JMF(%) that corresponds to a Pay Value of 0.95 to $\pm 0.6$ .
<b>Subsection:</b>	403.02.10 Material Transfer Vehicle (MTV).
<b>Revision:</b>	Replace the first sentence with the following: In addition to the equipment specified above, provide a MTV with the following minimum characteristics:
<b>Subsection:</b>	412.02.09 Material Transfer Vehicle (MTV).
<b>Revision:</b>	Replace the paragraph with the following: Provide and utilize a MTV with the minimum characteristics outlined in section 403.02.10.

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<b>Subsection:</b> <b>Revision:</b>	412.03.07 Placement and Compaction. Replace the first paragraph with the following: Use a MTV when placing SMA mixture in the driving lanes. The MTV is not required on ramps and/or shoulders unless specified in the contract. When the Engineer determines the use of the MTV is not practical for a portion of the project, the Engineer may waive its requirement for that portion of pavement by a letter documenting the waiver.
<b>Subsection:</b> <b>Revision:</b>	412.04 MEASUREMENT. Add the following subsection: 412.04.03. Material Transfer Vehicle (MTV). The Department will not measure the MTV for payment and will consider its use incidental to the asphalt mixture.
<b>Subsection:</b> <b>Part:</b> <b>Revision:</b>	501.03.19 Surface Tolerances and Testing Surface. B) Ride Quality. Add the following to the end of the first paragraph: The Department will specify if the ride quality requirements are Category A or Category B when ride quality is specified in the Contract. Category B ride quality requirements shall apply when the Department fails to classify which ride quality requirement will apply to the Contract.
<b>Subsection:</b> <b>Revision:</b>	603.03.06 Cofferdams. Replace the seventh sentence of paragraph one with the following: Submit drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
<b>Subsection:</b> <b>Revision:</b>	605.03.04 Tack Welding. Insert the subsection and the following: 605.03.04 Tack Welding. The Department does not allow tack welding.
<b>Subsection:</b> <b>Part:</b> <b>Number:</b> <b>Revision:</b>	606.03.17 Special Requirements for Latex Concrete Overlays. A) Existing Bridges and New Structures. 1) Prewetting and Grout-Bond Coat. Add the following sentence to the last paragraph: Do not apply a grout-bond coat on bridge decks prepared by hydrodemolition.
<b>Subsection:</b> <b>Revision:</b>	609.03 Construction. Replace Subsection 609.03.01 with the following: 609.03.01 A) Swinging the Spans. Before placing concrete slabs on steel spans or precast concrete release the temporary erection supports under the bridge and swing the span free on its supports. 609.03.01 B) Lift Loops. Cut all lift loops flush with the top of the precast beam once the beam is placed in the final location and prior to placing steel reinforcement. At locations where lift loops are cut, paint the top of the beam with galvanized or epoxy paint.
<b>Subsection:</b> <b>Revision:</b>	611.03.02 Precast Unit Construction. Replace the first sentence of the subsection with the following: Construct units according to ASTM C1577, <b>replacing Table 1 (Design Requirements for Precast Concrete Box Sections Under Earth, Dead and HL-93 Live Load Conditions) with KY Table 1 (Precast Culvert KYHL-93 Design Table)</b> , and Section 605 with the following exceptions and additions:

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<b>Subsection:</b>	613.03.01 Design.
<b>Number:</b>	2)
<b>Revision:</b>	Replace "AASHTO Standard Specifications for Highway Bridges" with "AASHTO LRFD Bridge Design Specifications"
<b>Subsection:</b>	615.06.02
<b>Revision:</b>	Add the following sentence to the end of the subsection. The ends of units shall be normal to walls and centerline except exposed edges shall be beveled $\frac{3}{4}$ inch.
<b>Subsection:</b>	615.06.03 Placement of Reinforcement in Precast 3-Sided Units.
<b>Revision:</b>	Replace the reference of 6.6 in the section to 615.06.06.
<b>Subsection:</b>	615.06.04 Placement of Reinforcement for Precast Endwalls.
<b>Revision:</b>	Replace the reference of 6.7 in the section to 615.06.07.
<b>Subsection:</b>	615.06.06 Laps, Welds, and Spacing for Precast 3-Sided Units.
<b>Revision:</b>	Replace the subsection with the following: Tension splices in the circumferential reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. The overlap of welded wire fabric shall be measured between the outer most longitudinal wires of each fabric sheet. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. For splices other than tension splices, the overlap shall be a minimum of 12" for welded wire fabric or deformed billet-steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be no less than 2 inches and no more than 4 inches. The spacing center to center of the longitudinal wires shall not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches.
<b>Subsection:</b>	615.06.07 Laps, Welds, and Spacing for Precast Endwalls.
<b>Revision:</b>	Replace the subsection with the following: Splices in the reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. The spacing center-to-center of the wire fabric sheet shall not be less than 2 inches or more than 8 inches.



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<b>Subsection:</b>	615.08.01 Type of Test Specimen.
<b>Revision:</b>	Replace the subsection with the following: Start-up slump, air content, unit weight, and temperature tests will be performed each day on the first batch of concrete. Acceptable start-up results are required for production of the first unit. After the first unit has been established, random acceptance testing is performed daily for each 50 yd <sup>3</sup> (or fraction thereof). In addition to the slump, air content, unit weight, and temperature tests, a minimum of one set of cylinders shall be required each time plastic property testing is performed.
<b>Subsection:</b>	615.08.02 Compression Testing.
<b>Revision:</b>	Delete the second sentence.
<b>Subsection:</b>	615.08.04 Acceptability of Core Tests.
<b>Revision:</b>	Delete the entire subsection.
<b>Subsection:</b>	615.12 Inspection.
<b>Revision:</b>	Add the following sentences to the end of the subsection: Units will arrive at jobsite with the "Kentucky Oval" stamped on the unit which is an indication of acceptable inspection at the production facility. Units shall be inspected upon arrival for any evidence of damage resulting from transport to the jobsite.
<b>Subsection:</b>	716.02.02 Paint.
<b>Revision:</b>	Replace sentence with the following: Conform to Section 821.
<b>Subsection:</b>	716.03 CONSTRUCTION.
<b>Revision:</b>	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
<b>Subsection:</b>	716.03.02 Lighting Standard Installation.
<b>Revision:</b>	Replace the second sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
<b>Subsection:</b>	716.03.02 Lighting Standard Installation.
<b>Part:</b>	A) Conventional Installation.
<b>Revision:</b>	Replace the third sentence with the following: Orient the transformer base so the door is positioned on the side away from on-coming traffic.
<b>Subsection:</b>	716.03.02 Lighting Standard Installation.
<b>Part:</b>	A) Conventional Installation.
<b>Number:</b>	1) Breakaway Installation and Requirements.
<b>Revision:</b>	Replace the first sentence with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
<b>Subsection:</b>	716.03.02 Lighting Standard Installation.
<b>Part:</b>	B) High Mast Installation
<b>Revision:</b>	Replace the first sentence with the following: Install each high mast pole as noted on plans.
<b>Subsection:</b>	716.03.02 Lighting Standard Installation.
<b>Part:</b>	B) High Mast Installation
<b>Number:</b>	2) Concrete Base Installation
<b>Revision:</b>	Modification of Chart and succeeding paragraphs within this section:

<table border="1"> <tr> <th colspan="8">Drilled Shaft Depth Data</th> </tr> <tr> <th colspan="2">Level Ground</th> <th colspan="2">3:1 Ground Slope</th> <th colspan="2">2:1 Ground Slope</th> <th colspan="2">1.5:1 Ground Slope <sup>(2)</sup></th> </tr> <tr> <th>Soil</th> <th>Rock</th> <th>Soil</th> <th>Rock</th> <th>Soil</th> <th>Rock</th> <th>Soil</th> <th>Rock</th> </tr> <tr> <td>17 ft</td> <td>7 ft</td> <td>19 ft</td> <td>7 ft</td> <td>20 ft</td> <td>7 ft</td> <td>(1)</td> <td>7 ft</td> </tr> </table>								Drilled Shaft Depth Data								Level Ground		3:1 Ground Slope		2:1 Ground Slope		1.5:1 Ground Slope <sup>(2)</sup>		Soil	Rock	Soil	Rock	Soil	Rock	Soil	Rock	17 ft	7 ft	19 ft	7 ft	20 ft	7 ft	(1)	7 ft
Drilled Shaft Depth Data																																							
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Vertical Bars		Ties or Spiral																																					
Size	Total	Size	Spacing or Pitch																																				
#10	16	#4	12 inch																																				

(1): Shaft length is 22' for cohesive soil only. For cohesionless soil, contact geotechnical branch for design.

(2): Do not construct high mast drilled shafts on ground slopes steeper than 1.5:1 without the approval of the Division of Traffic.

If rock is encountered during drilling operations and confirmed by the engineer to be of sound quality, the shaft is only required to be further advanced into the rock by the length of rock socket shown in the table. The total length of the shaft need not be longer than that of soil alone. Both longitudinal rebar length and number of ties or spiral length shall be adjusted accordingly.

If a shorter depth is desired for the drilled shaft, the contractor shall provide, for the state's review and approval, a detailed column design with individual site specific soil and rock analysis performed and approved by a Professional Engineer licensed in the Commonwealth of Kentucky.

Spiral reinforcement may be substituted for ties. If spiral reinforcement is used, one and one-half closed coils shall be provided at the ends of each spiral unit. Subsurface conditions consisting of very soft clay or very loose saturated sand could result in soil parameters weaker than those assumed. Engineer shall consult with the geotechnical branch if such conditions are encountered.

The bottom of the drilled hole shall be firm and thoroughly cleaned so no loose or compressible materials are present at the time of the concrete placement. If the drilled hole contains standing water, the concrete shall be placed using a tremie to displace water. Continuous concrete flow will be required to insure full displacement of any water.

The reinforcement and anchor bolts shall be adequately supported in the proper positions so no movement occurs during concrete placement. Welding of anchor bolts to the reinforcing cage is unacceptable, templates shall be used. Exposed portions of the foundation shall be formed to create a smooth finished surface. All forming shall be removed upon completion of foundation construction.

<b>Subsection:</b>	716.03.03 Trenching.
<b>Part:</b>	A) Trenching of Conduit for Highmast Ducted Cables.
<b>Revision:</b>	Add the following after the first sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.



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<b>Subsection:</b>	716.03.03 Trenching.
<b>Part:</b>	B) Trenching of Conduit for Non-Highmast Cables.
<b>Revision:</b>	Add the following after the second sentence: If depths greater than 24 inches are necessary for either situation listed previously, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
<b>Subsection:</b>	716.03.10 Junction Boxes.
<b>Revision:</b>	Replace subsection title with the following: Electrical Junction Box.
<b>Subsection:</b>	716.04.07 Pole with Secondary Control Equipment.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure mounting the cabinet to the pole, backfilling, restoration, any necessary hardware to anchor pole, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breaker, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
<b>Subsection:</b>	716.04.08 Lighting Control Equipment.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure constructing the concrete base, excavation, backfilling, restoration, any necessary anchors, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breakers, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
<b>Subsection:</b>	716.04.09 Luminaire.
<b>Revision:</b>	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
<b>Subsection:</b>	716.04.10 Fused Connector Kits.
<b>Revision:</b>	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
<b>Subsection:</b>	716.04.13 Junction Box.
<b>Revision:</b>	Replace the subsection title with the following: Electrical Junction Box Type Various.
<b>Subsection:</b>	716.04.13 Junction Box.
<b>Part:</b>	A) Junction Electrical.
<b>Revision:</b>	Rename A) Junction Electrical to the following: A) Electrical Junction Box.
<b>Subsection:</b>	716.04.14 Trenching and Backfilling.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.

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<b>Subsection:</b>	716.04.18 Remove Lighting.															
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as a lump sum for the removal of lighting equipment. The Department will not measure the disposal of all equipment and materials off the project by the contractor. The Department also will not measure the transportation of the materials and will consider them incidental to this item of work.															
<b>Subsection:</b>	716.04.20 Bore and Jack Conduit.															
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.															
<b>Subsection:</b>	716.05 PAYMENT.															
<b>Revision:</b>	Replace items 04810-04811, 20391NS835 and, 20392NS835 under <u>Code</u> , <u>Pay Item</u> , and <u>Pay Unit</u> with the following: <table><tr><td><u>Code</u></td><td><u>Pay Item</u></td><td><u>Pay Unit</u></td></tr><tr><td>04810</td><td>Electrical Junction Box</td><td>Each</td></tr><tr><td>04811</td><td>Electrical Junction Box Type B</td><td>Each</td></tr><tr><td>20391NS835</td><td>Electrical Junction Box Type A</td><td>Each</td></tr><tr><td>20392NS835</td><td>Electrical Junction Box Type C</td><td>Each</td></tr></table>	<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>	04810	Electrical Junction Box	Each	04811	Electrical Junction Box Type B	Each	20391NS835	Electrical Junction Box Type A	Each	20392NS835	Electrical Junction Box Type C	Each
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20392NS835	Electrical Junction Box Type C	Each														
<b>Subsection:</b>	723.02.02 Paint.															
<b>Revision:</b>	Replace sentence with the following: Conform to Section 821.															
<b>Subsection:</b>	723.03 CONSTRUCTION.															
<b>Revision:</b>	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,															
<b>Subsection:</b>	723.03.02 Poles and Bases Installation.															
<b>Revision:</b>	Replace the first sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.															
<b>Subsection:</b>	723.03.02 Poles and Bases Installation.															
<b>Part:</b>	A) Steel Strain and Mastarm Poles Installation															
<b>Revision:</b>	Replace the second paragraph with the following: For concrete base installation, see Section 716.03.02, B), 2), Paragraphs 2-7. Drilled shaft depth shall be based on the soil conditions encountered during drilling and slope condition at the site. Refer to the design chart below:															
<b>Subsection:</b>	723.03.02 Poles and Bases Installation.															
<b>Part:</b>	B) Pedestal or Pedestal Post Installation.															
<b>Revision:</b>	Replace the fourth sentence of the paragraph with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.															

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<b>Subsection:</b>	723.03.03 Trenching.
<b>Part:</b>	A) Under Roadway.
<b>Revision:</b>	Add the following after the second sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain either required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
<b>Subsection:</b>	723.03.11 Wiring Installation.
<b>Revision:</b>	Add the following sentence between the fifth and sixth sentences: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
<b>Subsection:</b>	723.03.12 Loop Installation.
<b>Revision:</b>	Replace the fourth sentence of the 2nd paragraph with the following: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
<b>Subsection:</b>	723.04.02 Junction Box.
<b>Revision:</b>	Replace subsection title with the following: Electrical Junction Box Type Various.
<b>Subsection:</b>	723.04.03 Trenching and Backfilling.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.10 Signal Pedestal.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, specified conduits, fittings, ground rod, ground wire, backfilling, restoring disturbed areas, or other necessary hardware and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.15 Loop Saw Slot and Fill.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure sawing, cleaning and filling induction loop saw slot, loop sealant, backer rod, and grout and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.16 Pedestrian Detector.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished, installed and connected to pole/pedestal. The Department will not measure installing R10-3e (with arrow) sign, furnishing and installing mounting hardware for sign and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.18 Signal Controller- Type 170.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure furnishing and connecting the induction of loop amplifiers, pedestrian isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.

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<b>Subsection:</b>	723.04.20 Install Signal Controller - Type 170.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed. The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, and excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure connecting the induction loop amplifiers, pedestrian, isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.22 Remove Signal Equipment.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as a lump sum removal of signal equipment. The Department will not measure the return of control equipment and signal heads to the Department of Highways as directed by the District Traffic Engineer. The Department also will not measure the transportation of materials of the disposal of all other equipment and materials off the project by the contractor and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.28 Install Pedestrian Detector Audible.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure installing sign R10-3e (with arrow) and will consider it incidental to this item of work.
<b>Subsection:</b>	723.04.29 Audible Pedestrian Detector.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure furnishing and installing the sign R10-3e (with arrow) and will consider it incidental to this item of work.
<b>Subsection:</b>	723.04.30 Bore and Jack Conduit.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.
<b>Subsection:</b>	723.04.31 Install Pedestrian Detector.
<b>Revision:</b>	Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed and connected to pole/pedestal. The Department will not measure installing sign R 10-3e (with arrow) and will consider it incidental to this item of work.
<b>Subsection:</b>	723.04.32 Install Mast Arm Pole.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure arms, signal mounting brackets, anchor bolts, or any other necessary hardware and will consider them incidental to this item of work.
<b>Subsection:</b>	723.04.33 Pedestal Post.
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, conduit, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

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<b>Subsection:</b>	723.04.36 Traffic Signal Pole Base.															
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, reinforcing steel, anchor bolts, specified conduits, ground rods, ground wires, backfilling, or restoration and will consider them incidental to this item of work.															
<b>Subsection:</b>	723.04.37 Install Signal Pedestal.															
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.															
<b>Subsection:</b>	723.04.38 Install Pedestal Post.															
<b>Revision:</b>	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.															
<b>Subsection:</b>	723.05 PAYMENT.															
<b>Revision:</b>	<p>Replace items 04810-04811, 20391NS835 and, 20392NS835 under <u>Code</u>, <u>Pay Item</u>, and <u>Pay Unit</u> with the following:</p> <table><tr><td><u>Code</u></td><td><u>Pay Item</u></td><td><u>Pay Unit</u></td></tr><tr><td>04810</td><td>Electrical Junction Box</td><td>Each</td></tr><tr><td>04811</td><td>Electrical Junction Box Type B</td><td>Each</td></tr><tr><td>20391NS835</td><td>Electrical Junction Box Type A</td><td>Each</td></tr><tr><td>20392NS835</td><td>Electrical Junction Box Type C</td><td>Each</td></tr></table>	<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>	04810	Electrical Junction Box	Each	04811	Electrical Junction Box Type B	Each	20391NS835	Electrical Junction Box Type A	Each	20392NS835	Electrical Junction Box Type C	Each
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<b>Subsection:</b>	804.01.02 Crushed Sand.															
<b>Revision:</b>	Delete last sentence of the section.															
<b>Subsection:</b>	804.01.06 Slag.															
<b>Revision:</b>	<p>Add subsection and following sentence.</p> <p>Provide blast furnace slag sand where permitted. The Department will allow steel slag sand only in asphalt surface applications.</p>															
<b>Subsection:</b>	804.04 Asphalt Mixtures.															
<b>Revision:</b>	<p>Replace the subsection with the following:</p> <p>Provide natural, crushed, conglomerate, or blast furnace slag sand, with the addition of filler as necessary, to meet gradation requirements. The Department will allow any combination of natural, crushed, conglomerate or blast furnace slag sand when the combination is achieved using cold feeds at the plant. The Engineer may allow other fine aggregates.</p>															
<b>Subsection:</b>	806.03.01 General Requirements.															
<b>Revision:</b>	<p>Replace the second sentence of the paragraph with the following:</p> <p>Additionally, the material must have a minimum solubility of 99.0 percent when tested according to AASHTO T 44 and PG 76-22 must exhibit a minimum recovery of 60 percent, with a J<sub>NR</sub> (nonrecoverable creep compliance) between 0.1 and 0.5, when tested according to AASHTO TP 70.</p>															

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<b>Subsection:</b>	806.03.01 General Requirements.						
<b>Table:</b>	PG Binder Requirements and Price Adjustment Schedule						
<b>Revision:</b>	Replace the Elastic Recovery, % <sup>(3)</sup> (AASHTO T301) and all corresponding values in the table with the following:						
	<u>Test</u>	<u>Specification</u>	<u>100% Pay</u>	<u>90% Pay</u>	<u>80% Pay</u>	<u>70% Pay</u>	<u>50%Pay<sup>(1)</sup></u>
	MSCR recovery, % <sup>(3)</sup>	60 Min.	≥58	56	55	54	<53
	(AASHTO TP 70)						
<b>Subsection:</b>	806.03.01 General Requirements.						
<b>Table:</b>	PG Binder Requirements and Price Adjustment Schedule						
<b>Superscript:</b>	(3)						
<b>Revision:</b>	Replace <sup>(3)</sup> with the following: Perform testing at 64°C.						
<b>Subsection:</b>	813.04 Gray Iron Castings.						
<b>Revision:</b>	Replace the reference to "AASHTO M105" with "ASTM A48".						
<b>Subsection:</b>	813.09.02 High Strength Steel Bolts, Nuts, and Washers.						
<b>Number:</b>	A) Bolts.						
<b>Revision:</b>	Delete first paragraph and "Hardness Number" Table. Replace with the following: A) Bolts. Conform to ASTM A325 (AASHTO M164) or ASTM A490 (AASHTO 253) as applicable.						
<b>Subsection:</b>	814.04.02 Timber Guardrail Posts.						
<b>Revision:</b>	Third paragraph, replace the reference to "AWPA C14" with "AWPA U1, Section B, Paragraph 4.1".						
<b>Subsection:</b>	814.04.02 Timber Guardrail Posts.						
<b>Revision:</b>	Replace the first sentence of the fourth paragraph with the following: Use any of the species of wood for round or square posts covered under AWPA U1.						
<b>Subsection:</b>	814.04.02 Timber Guardrail Posts.						
<b>Revision:</b>	Fourth paragraph, replace the reference to "AWPA C2" with "AWPA U1, Section B, Paragraph 4.1".						
<b>Subsection:</b>	814.04.02 Timber Guardrail Posts.						
<b>Revision:</b>	Delete the second sentence of the fourth paragraph.						
<b>Subsection:</b>	814.05.02 Composite Plastic.						
<b>Revision:</b>	1) Add the following to the beginning of the first paragraph: Select composite offset blocks conforming to this section and assure blocks are from a manufacturer included on the Department's List of Approved Materials. 2) Delete the last paragraph of the subsection.						
<b>Subsection:</b>	816.07.02 Wood Posts and Braces.						
<b>Revision:</b>	First paragraph, replace the reference to "AWPA C5" with "AWPA U1, Section B, Paragraph 4.1".						
<b>Subsection:</b>	816.07.02 Wood Posts and Braces.						
<b>Revision:</b>	Delete the second sentence of the first paragraph.						
<b>Subsection:</b>	818.07 Preservative Treatment.						
<b>Revision:</b>	First paragraph, replace all references to "AWPA C14" with "AWPA U1, Section A".						



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<b>Subsection:</b>	834.14 Lighting Poles.
<b>Revision:</b>	Replace the first sentence with the following: Lighting pole design shall be in accordance with loading and allowable stress requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims, with the exception of the following: The Cabinet will waive the requirement stated in the first sentence of Section 5.14.6.2 – Reinforced Holes and Cutouts for high mast poles (only). The minimum diameter at the base of the pole shall be 22 inches for high mast poles (only).
<b>Subsection</b>	834.14.03 High Mast Poles.
<b>Revision:</b>	Remove the second and fourth sentence from the first paragraph.
<b>Subsection</b>	834.14.03 High Mast Poles.
<b>Revision:</b>	Replace the third paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
<b>Subsection:</b>	834.14.03 High Mast Poles.
<b>Revision:</b>	<p>Replace paragraph six with the following: Provide a pole section that conforms to ASTM A 595 grade A with a minimum yield strength of 55 KSI or ASTM A 572 with a minimum yield strength of 55 KSI. Use tubes that are round or 16 sided with a four inch corner radius, have a constant linear taper of .144 in/ft and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Provide pole sections that are telescopically slip fit assembled in the field to facilitate inspection of interior surface welds and the protective coating. The minimum length of the telescopic slip splices shall be 1.5 times the inside diameter of the exposed end of the female section. Use longitudinal seam welds as commended in Section 5.15 of the AASHTO 2013 Specifications. The thickness of the transverse base shall not be less than 2 inches. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration groove weld with backup bar.</p> <p>The handhole cover shall be removable from the handhole frame. One the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department’s standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM A 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7-guage stainless steel to provide adjustability to insure weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube of the pole but needs to be at least 15 inches. Provide products that are hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A 153 (hardware items).</p>
<b>Subsection:</b>	834.16 ANCHOR BOLTS.
<b>Revision:</b>	Insert the following sentence at the beginning of the paragraph: The anchor bolt design shall follow the NCHRP Report 494 Section 2.4 and NCHRP 469 Appendix A Specifications.

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<b>Subsection:</b>	834.17.01 Conventional.
<b>Revision:</b>	Add the following sentence after the second sentence: Provide a waterproof sticker mounted on the bottom of the housing that is legible from the ground and indicates the wattage of the fixture by providing the first two numbers of the wattage.
<b>Subsection:</b>	834.21.01 Waterproof Enclosures.
<b>Revision:</b>	Replace the last five sentences in the second paragraph with the following sentences: Provide a cabinet door with a louvered air vent, filter-retaining brackets and an easy to clean metal filter. Provide a cabinet door that is keyed with a factory installed standard no. 2 corbin traffic control key. Provide a light fixture with switch and bulb. Use a 120-volt fixture and utilize a L.E.D. bulb (equivalent to 60 watts minimum). Fixture shall be situated at or near the top of the cabinet and illuminate the contents of the cabinet. Provide a 120 VAC GFI duplex receptacle in the enclosure with a separate 20 amp breaker.
<b>Subsection:</b>	835.07 Traffic Poles.
<b>Revision:</b>	Replace the first sentence of the first paragraph with the following: Pole diameter and wall thickness shall be calculated in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
<b>Subsection:</b>	835.07 Traffic Poles.
<b>Revision:</b>	*Replace the first sentence of the fourth paragraph with the following: Ensure transverse plates have a thickness $\geq 2$ inches. *Add the following sentence to the end of the fourth paragraph: The bottom pole diameter shall not be less than 16.25 inches.
<b>Subsection:</b>	835.07 Traffic Poles.
<b>Revision:</b>	Replace the third sentence of the fifth paragraph with the following: For anchor bolt design, pole forces shall be positioned in such a manner to maximize the force on any individual anchor bolt regardless of the actual anchor bolt orientation with the pole.
<b>Subsection:</b>	835.07 Traffic Poles.
<b>Revision:</b>	Replace the first and second sentence of the sixth paragraph with the following: The pole handhole shall be 25 inches by 6.5 inches. The handhole cover shall be removable from the handhole frame. On the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7 gauge stainless steel to provide adjustability to insure a weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube but needs to be at least 12 inches.



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<b>Subsection:</b>	835.07 Traffic Poles.									
<b>Revision:</b>	*Replace the first sentence of the last paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. *Replace the third sentence of the last paragraph with the following: All tables referenced in 835.07 are found in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.									
<b>Subsection:</b>	835.07.01 Steel Strain Poles.									
<b>Revision:</b>	Replace the second sentence of the second paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.									
<b>Subsection:</b>	835.07.01 Steel Strain Poles.									
<b>Revision:</b>	Replace number 7. after the second paragraph with the following: 7. Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.									
<b>Subsection:</b>	835.07.02 Mast Arm Poles.									
<b>Revision:</b>	Replace the second sentence of the fourth paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.									
<b>Subsection:</b>	835.07.02 Mast Arm Poles.									
<b>Revision:</b>	Replace number 7) after the fourth paragraph with the following: 7) Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.									
<b>Subsection:</b>	835.07.03 Anchor Bolts.									
<b>Revision:</b>	Add the following to the end of the paragraph: There shall be two steel templates (one can be used for the headed part of the anchor bolt when designed in this manner) provided per pole. Templates shall be contained within a 26.5 inch diameter. All templates shall be fully galvanized (ASTM A 153).									
<b>Subsection:</b>	835.16.05 Optical Units.									
<b>Revision:</b>	Replace the 3rd paragraph with the following: The list of certified products can be found on the following website: <a href="http://www.intertek.com">http://www.intertek.com</a> .									
<b>Subsection:</b>	835.19.01 Pedestrian Detector Body.									
<b>Revision:</b>	Replace the first sentence with the following: Provide a four holed pole mounted aluminum rectangular housing that is compatible with the pedestrian detector.									
<b>Subsection:</b>	843.01.01 Geotextile Fabric.									
<b>Table:</b>	TYPE I FABRIC GEOTEXTILES FOR SLOPE PROTECTION AND CHANNEL LINING									
<b>Revision:</b>	Add the following to the chart: <table><tr><td><u>Property</u></td><td><u>Minimum Value<sup>(1)</sup></u></td><td><u>Test Method</u></td></tr><tr><td>CBR Puncture (lbs)</td><td>494</td><td>ASTM D6241</td></tr><tr><td>Permittivity (1/s)</td><td>0.7</td><td>ASTM D4491</td></tr></table>	<u>Property</u>	<u>Minimum Value<sup>(1)</sup></u>	<u>Test Method</u>	CBR Puncture (lbs)	494	ASTM D6241	Permittivity (1/s)	0.7	ASTM D4491
<u>Property</u>	<u>Minimum Value<sup>(1)</sup></u>	<u>Test Method</u>								
CBR Puncture (lbs)	494	ASTM D6241								
Permittivity (1/s)	0.7	ASTM D4491								

Supplemental Specifications to the  
Standard Specifications for Road and Bridge Construction, 2012 Edition  
Effective with the August 22, 2014 Letting

<b>Subsection:</b>	843.01.01 Geotextile Fabric.		
<b>Table:</b>	TYPE II FABRIC GEOTEXTILES FOR UNDERDRAINS		
<b>Revision:</b>	Add the following to the chart:		
	<u>Property</u>	<u>Minimum Value<sup>(1)</sup></u>	<u>Test Method</u>
	CBR Puncture (lbs)	210	ASTM D6241
	Permittivity (1/s)	0.5	ASTM D4491

<b>Subsection:</b>	843.01.01 Geotextile Fabric.		
<b>Table:</b>	TYPE III FABRIC GEOTEXTILES FOR SUBGRADE OR EMBANKMENT STABILIZATION		
<b>Revision:</b>	Add the following to the chart:		
	<u>Property</u>	<u>Minimum Value<sup>(1)</sup></u>	<u>Test Method</u>
	CBR Puncture (lbs)	370	ASTM D6241
	Permittivity (1/s)	0.05	ASTM D4491

<b>Subsection:</b>	843.01.01 Geotextile Fabric.		
<b>Table:</b>	TYPE IV FABRIC GEOTEXTILES FOR EMBANKMENT DRAINAGE BLANKETS AND PAVEMENT EDGE DRAINS		
<b>Revision:</b>	Add the following to the chart:		
	<u>Property</u>	<u>Minimum Value<sup>(1)</sup></u>	<u>Test Method</u>
	CBR Puncture (lbs)	309	ASTM D6241
	Permittivity (1/s)	0.5	ASTM D4491

<b>Subsection:</b>	843.01.01 Geotextile Fabric.		
<b>Table:</b>	TYPE V HIGH STRENGTH GEOTEXTILE FABRIC		
<b>Revision:</b>	Make the following changes to the chart:		
	<u>Property</u>	<u>Minimum Value<sup>(1)</sup></u>	<u>Test Method</u>
	CBR Puncture (lbs)	618	ASTM D6241
	Grab Strength (lbs)	700	ASTM D4632
	Apparent Opening Size	U.S. #40 <sup>(3)</sup>	ASTM D4751
	<sup>(3)</sup> Maximum average roll value.		

## **PART III**

### **EMPLOYMENT, WAGE AND RECORD REQUIREMENTS**

REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

**6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (ii) The classification is utilized in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

## 3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.



- (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.
- (4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

- a. Apprentices (programs of the USDOL).
- Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.
- The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility.**

- a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

**VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

**VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

**VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

- 1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
- 2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

**1. Instructions for Certification – First Tier Participants:**

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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**2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

- (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
- (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
- (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**2. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\* \* \* \* \*

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

- 1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
  - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
  - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- 2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
- 3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS  
PREFERENCE FOR APPALACHIAN DEVELOPMENT  
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS  
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.



**KENTUCKY TRANSPORTATION CABINET  
DEPARTMENT OF HIGHWAYS**

**EMPLOYMENT REQUIREMENTS  
RELATING TO  
NONDISCRIMINATION OF EMPLOYEES  
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)**

**AN ACT OF THE KENTUCKY GENERAL ASSEMBLY  
TO PREVENT DISCRIMINATION IN EMPLOYMENT**

**KRS CHAPTER 344  
EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy). The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age (between forty and seventy), in admission to, or employment in any program established to

provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

REVISED: 12-3-92

### **Standard Title VI/Non-Discrimination Assurances**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:
  - a. withholding payments to the contractor under the contract until the contractor complies; and/or
  - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

### **Standard Title VI/Non-Discrimination Statutes and Authorities**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

## EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (6) provides:

No present or former public servant shall, within six (6) months of following termination of his office or employment, accept employment, compensation or other economic benefit from any person or business that contracts or does business with the state in matters in which he was directly involved during his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved in state government. This subsection shall not prohibit the performance of ministerial functions, including, but not limited to, filing tax returns, filing applications for permits or licenses, or filing incorporation papers.

KRS 11A.040 (8) states:

A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, for a period of one (1) year after the latter of:

- a) The date of leaving office or termination of employment; or
- b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

KENTUCKY TRANSPORTATION CABINET  
DEPARTMENT OF HIGHWAYS  
**TRAINING SPECIAL PROVISIONS**

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," (Attachment 1), and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of trainees to be trained under these special provisions and in this contract is shown in "Special Notes Applicable to Project" in the bid proposal.

In the event that a contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction the contractor shall submit to the Kentucky Transportation Cabinet, Department of Highways for its approval, an acceptable training program on forms provided by the Cabinet indicating the number of trainees to be trained in each selected classification. Failure to provide the Cabinet with the proper documentation evidencing an acceptable training program prior to commencing construction shall cause the Cabinet to suspend the operations of the contractor with (if applicable) working days being charged as usual against the contract time or (if applicable), no additional contract time being granted for the suspension period. The Cabinet will not be liable for the payment of any work performed during the suspension period due to the failure of the contractor to provide an acceptable training program. Said suspension period shall be terminated when an acceptable training program is received by the Cabinet. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case. The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Kentucky Transportation Cabinet, Department of Highways and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs

registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed for each hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

General Decision Number: KY150100 06/05/2015 KY100

Superseded General Decision Number: KY20140100

State: Kentucky

Construction Type: Highway

Counties: Anderson, Bath, Bourbon, Boyd, Boyle, Bracken, Breckinridge, Bullitt, Carroll, Carter, Clark, Elliott, Fayette, Fleming, Franklin, Gallatin, Grant, Grayson, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Larue, Lewis, Madison, Marion, Mason, Meade, Mercer, Montgomery, Nelson, Nicholas, Oldham, Owen, Robertson, Rowan, Scott, Shelby, Spencer, Trimble, Washington and Woodford Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/02/2015
1	01/23/2015
2	01/30/2015
3	02/20/2015
4	05/01/2015
5	05/22/2015
6	06/05/2015

BRIN0004-003 06/01/2011

BRECKENRIDGE COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 24.11	10.07
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BRKY0001-005 06/01/2014

BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, & TRIMBLE COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 25.37	10.50
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BRKY0002-006 06/01/2011		

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 26.57	10.26
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BRKY0007-004 06/01/2014		

BOYD, CARTER, ELLIOT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 30.57	17.94
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BRKY0017-004 06/01/2009		

ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN,  
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,  
OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 24.11	9.97
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CARP0064-001 05/01/2015		

	Rates	Fringes
CARPENTER.....	\$ 27.50	16.06
Diver.....	\$ 41.63	16.06
PILEDRIVERMAN.....	\$ 27.75	16.06
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ELEC0212-008 06/02/2014		

BRACKEN, GALLATIN and GRANT COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 26.74	16.45
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ELEC0212-014 12/01/2014		

BRACKEN, GALLATIN & GRANT COUNTIES:

	Rates	Fringes
Sound & Communication Technician.....	\$ 22.75	10.08
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ELEC0317-012 05/28/2014		

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:



	Rates	Fringes
ELECTRICIAN		
Cable Splicer.....	\$ 32.68	18.13
Electrician.....	\$ 32.62	21.45

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ELEC0369-007 05/28/2014

ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL,  
CLARK, FAYETTE, FRAONKLIN, GRAYSON, HARDIN, HARRISON, HENRY,  
JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER,  
MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT,  
SHELBY, SPENCER, TRIMBLE, WASHINGTON, & WOODFORD COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 29.88	14.78

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ELEC0575-002 06/02/2014

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 31.70	14.21

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ENGI0181-018 07/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 28.85	14.15
GROUP 2.....	\$ 26.24	14.15
GROUP 3.....	\$ 26.65	14.15
GROUP 4.....	\$ 25.95	14.15

#### OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller;  
Batcher Plant; Bituminous Paver; Bituminous Transfer  
Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All  
Scoop; Carry Deck Crane; Central Compressor Plant; Cherry  
Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over);  
Concrete Paver; Truck-Mounted Concrete Pump; Core Drill;  
Crane; Crusher Plant; Derrick; Derrick Boat; Ditching &  
Trenching Machine; Dragline; Dredge Operator; Dredge  
Engineer; Elevating Grader & Loaders; Grade-All; Gurries;  
Heavy Equipment Robotics Operator/Mechanic; High Lift;  
Hoe-Type Machine; Hoist (Two or More Drums); Hoisting  
Engine (Two or More Drums); Horizontal Directional Drill  
Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau;  
Locomotive; Mechanic; Mechanically Operated Laser Screed;  
Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel  
Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete;  
Push Dozer; Rock Spreader, attached to equipment; Rotary  
Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier;  
Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom;  
Telescoping Type Forklift; Tow or Push Boat; Tower Crane

(French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Concrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points; & Whirley Oiler

GROUP 3 - All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling leads equals or exceeds 150 ft. - \$1.00 over Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10%

ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

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\* IRON0044-009 06/01/2015

BRACKEN, GALLATIN, GRANT, HARRISON, ROBERTSON,  
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);  
CARROLL (Eastern third, including the Township of Ghent);  
FLEMING (Western part, excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);  
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);  
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);  
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New

Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);  
SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall)

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 23.76	19.15
Structural.....	\$ 26.40	19.15

IRON0070-006 06/01/2014

ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN, GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE, WASHINGTON & WOODFORD  
BOURBON (Southern two-thirds, including Townships of Austerlity, Centerville, Clintonville, Elizabeth, Hutchison, Littlerock, North Middletown & Paris);  
CARROLL (Western two-thirds, including Townships of Carrollton, Easterday, English, Locust, Louis, Prestonville & Worthville);  
CLARK (Western two-thirds, including Townships of Becknerville, Flanagan, Ford, Pine Grove, Winchester & Wyandotte);  
OWEN (Eastern eighth, including Townships of Glenmary, Gratz, Monterey, Perry Park & Tacketts Mill);  
SCOTT (Southern third, including Townships of Georgetown, Great Crossing, Newtown, Stampling Ground & Woodlake);

	Rates	Fringes
IRONWORKER.....	\$ 26.97	19.75

IRON0372-006 07/01/2014

BRACKEN, GALLATIN, GRANT, HARRISON and ROBERTSON  
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);  
CARROLL (Eastern third, including the Township of Ghent);  
FLEMING (Western part, Excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);  
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);  
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);  
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);  
SCOTT (Northern two-thirds, including Townships of Biddle,

Davis, Delaplain, Elmvile, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall) COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 26.25	18.45
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IRON0769-007 06/01/2014		

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN CLARK (Eastern third, including townships of Bloomingdale, Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson); FLEMING (Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksville, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford); MASON (Eastern third, including Townships of Helena, Marshall, Orangeburg, Plumville & Springdale); NICHOLAS (Eastern eighth, including the Township of Moorefield Sprout)

	Rates	Fringes
IRONWORKER		
ZONE 1.....	\$ 31.33	21.33
ZONE 2.....	\$ 31.73	21.33
ZONE 3.....	\$ 33.33	21.33

ZONE 1 - Up to 10 mile radius of Union Hall, Ashland, Ky., 1643 Greenup Ave.

ZONE 2 - 10 to 50 mile radius of Union Hall, Ashland, Ky., 1643 Greenup Ave.

ZONE 3 - 50 mile radius & over of Union Hall, Ashland, Ky., 1643 Greenup Ave.

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LABO0189-003 07/01/2014		

BATH, BOURBON, BOYD, BOYLE, BRACKEN, CARTER, CLARK, ELLIOTT, FAYETTE, FLEMING, FRANKLIN, GALLATIN, GRANT, GREENUP, HARRISON, JESSAMINE, LEWIS, MADISON, MASON, MERCER, MONTGOMERY, NICHOLAS, OWEN, ROBERTSON, ROWAN, SCOTT, & WOOLFORD COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 21.80	11.96
GROUP 2.....	\$ 22.05	11.96
GROUP 3.....	\$ 22.10	11.96
GROUP 4.....	\$ 22.70	11.96

#### LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement

Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

LABO0189-008 07/01/2014

ANDERSON, BULLITT, CARROLL, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 22.71	11.05
GROUP 2.....	\$ 22.96	11.05
GROUP 3.....	\$ 23.01	11.05
GROUP 4.....	\$ 23.61	11.05

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson;

Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

LABO0189-009 07/01/2014

BRECKINRIDGE & GRAYSON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 22.66	11.10
GROUP 2.....	\$ 22.91	11.10
GROUP 3.....	\$ 22.96	11.10
GROUP 4.....	\$ 23.56	11.10

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer);  
Brickmason Tender; Mortar Mixer Operator; Scaffold Builder;  
Burner & Welder; Bushhammer; Chain Saw Operator; Concrete  
Saw Operator; Deckhand Scow Man; Dry Cement Handler;  
Environmental - Nuclear, Radiation, Toxic & Hazardous Waste  
- Level C; Forklift Operator for Masonary; Form Setter;  
Green Concrete Cutting; Hand Operated Grouter & Grinder  
Machine Operator; Jackhammer; Pavement Breaker; Paving  
Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven  
Georgia Buggy & Wheel Barrow; Power Post Hole Digger;  
Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind  
Trencher; Sand Blaster; Concrete Chipper; Surface Grinder;  
Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman;  
Gunnite Operator & Mixer; Grout Pump Operator; Side Rail  
Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free  
Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher;  
Environmental - Nuclear, Radiation, Toxic & Hazardous Waste  
- Levels A & B; Miner & Driller (Free Air); Tunnel Blaster;  
& Tunnel Mucker (Free Air); Directional & Horizontal  
Boring; Air Track Drillers (All Types); Powdermen &  
Blasters; Troxler & Concrete Tester if Laborer is Utilized

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PAIN0012-005 06/11/2005

BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN,  
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,  
ROBERTSON, SCOTT & WOODFORD COUNTIES:

	Rates	Fringes
PAINTER		
Bridge/Equipment Tender and/or Containment Builder..	\$ 18.90	5.90
Brush & Roller.....	\$ 21.30	5.90
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement.....	\$ 22.30	5.90
Sandblasting & Waterblasting.....	\$ 22.05	5.90
Spray.....	\$ 21.80	5.90

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\* PAIN0012-017 05/01/2015

BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:

	Rates	Fringes
PAINTER (Heavy & Highway Bridges - Guardrails - Lightpoles - Striping)		
Bridge Equipment Tender and Containment Builder.....	\$ 20.73	9.06
Brush & Roller.....	\$ 23.39	9.06
Elevated Tanks;		



Steeplejack Work; Bridge &		
Lead Abatement.....	\$ 24.39	9.06
Sandblasting & Water		
Blasting.....	\$ 24.14	9.06
Spray.....	\$ 23.89	9.06

PAIN0118-004 06/01/2014

ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN,  
HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY,  
SPENCER, TRIMBLE & WASHINGTON COUNTIES:

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 18.50	11.97
Spray, Sandblast, Power		
Tools, Waterblast & Steam		
Cleaning.....	\$ 19.50	11.97

PAIN1072-003 12/01/2014

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS and ROWAN COUNTIES

	Rates	Fringes
Painters:		
Bridges; Locks; Dams;		
Tension Towers & Energized		
Substations.....	\$ 31.83	15.30
Power Generating Facilities.	\$ 28.59	15.30

PLUM0248-003 06/01/2014

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
Plumber and Steamfitter.....	\$ 33.00	18.95

PLUM0392-007 06/01/2014

BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN &  
ROBERTSON COUNTIES:

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 29.80	17.79

PLUM0502-003 08/01/2013

BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN  
(Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON,  
LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE &  
WASHINGTON COUNTIES

Rates	Fringes
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PLUMBER.....\$ 32.00 17.17  
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SUKY2010-160 10/08/2001

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 16.57	7.34
GROUP 2.....	\$ 16.68	7.34
GROUP 3.....	\$ 16.86	7.34
GROUP 4.....	\$ 16.96	7.34

TRUCK DRIVER CLASSIFICATIONS

- GROUP 1 - Mobile Batch Truck Tender
- GROUP 2 - Greaser; Tire Changer; & Mechanic Tender
- GROUP 3 - Single Axle Dump; Flatbed; Semi-trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Distributor; Mixer; & Truck Mechanic
- GROUP 4 - Euclid & Other Heavy Earthmoving Equipment & Lowboy; Articulator Cat; 5-Axle Vehicle; Winch & A-Frame when used in transporting materials; Ross Carrier; Forklift when used to transport building materials; & Pavement Breaker

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were

prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

These rates are listed pursuant to the Kentucky Determination No. CR-14-III- HWY dated July 14, 2014.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

**TO: EMPLOYERS/EMPLOYEES**

**PREVAILING WAGE SCHEDULE:**

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

**OVERTIME:**

Overtime is to be paid after an employee works eight (8) hours a day or forty (40) hours a week, whichever gives the employee the greater wages. At least time and one-half the base rate is required for all overtime. A laborer, workman or mechanic and an employer may enter into a written agreement or a collective bargaining agreement to work more than eight (8) hours a calendar day but not more than ten (10) hours a calendar day for the straight time hourly rate. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Diana Castle Radcliffe, P.E.  
Director, Division of Construction Procurement  
Frankfort, Kentucky 40622

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY  
(Executive Order 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

<b>GOALS FOR MINORITY PARTICIPATION IN EACH TRADE</b>	<b>GOALS FOR FEMALE PARTICIPATION IN EACH TRADE</b>
11.2%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. The notification shall be mailed to:

**Evelyn Teague, Regional Director  
Office of Federal Contract Compliance Programs  
61 Forsyth Street, SW, Suite 7B75  
Atlanta, Georgia 30303-8609**

4. As used in this Notice, and in the contract resulting from this solicitation, the "**covered area**" is Jefferson County.

## **PART IV**

## **INSURANCE**



## INSURANCE

The Contractor shall procure and maintain the following insurance in addition to the insurance required by law:

- 1) Commercial General Liability-Occurrence form – not less than \$2,000,000 General aggregate, \$2,000,000 Products & Completed Aggregate, \$1,000,000 Personal & Advertising, \$1,000,000 each occurrence.
- 2) Automobile Liability- \$1,000,000 per accident
- 3) Employers Liability:
  - a) \$100,000 Each Accident Bodily Injury
  - b) \$500,000 Policy limit Bodily Injury by Disease
  - c) \$100,000 Each Employee Bodily Injury by Disease
- 4) The insurance required above must be evidenced by a Certificate of Insurance and this Certificate of Insurance must contain one of the following statements:
  - a) "policy contains no deductible clauses."
  - b) "policy contains \_\_\_\_\_ (amount) deductible property damage clause but company will pay claim and collect the deductible from the insured."
- 5) KENTUCKY WORKMEN'S COMPENSATION INSURANCE. The contractor shall furnish evidence of coverage of all his employees or give evidence of self-insurance by submitting a copy of a certificate issued by the Workmen's Compensation Board.

The cost of insurance is incidental to all contract items. All subcontractors must meet the same minimum insurance requirements.

**PART V**

**BID ITEMS**

Report Date 6/3/15

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	6,207.00	TON		\$	
0020	00020		TRAFFIC BOUND BASE	232.00	TON		\$	
0030	00078		CRUSHED AGGREGATE SIZE NO 2	468.00	TON		\$	
0040	00100		ASPHALT SEAL AGGREGATE	172.00	TON		\$	
0050	00103		ASPHALT SEAL COAT	21.00	TON		\$	
0060	00110		GEOGRID REINFORCEMENT FOR ASPH FIBERGLASS PAVING MAT	7,538.00	SQYD		\$	
0070	00110		GEOGRID REINFORCEMENT FOR ASPH MULTI-AXIAL COMP PAVING GRID	17,537.00	SQYD		\$	
0080	00110		GEOGRID REINFORCEMENT FOR ASPH BI-AXIAL COMP PAVING GRID	13,447.00	SQYD		\$	
0090	00194		LEVELING & WEDGING PG76-22	18,489.00	TON		\$	
0100	00214		CL3 ASPH BASE 1.00D PG64-22	22,537.00	TON		\$	
0110	00219		CL4 ASPH BASE 1.00D PG76-22	30,351.00	TON		\$	
0120	00339		CL3 ASPH SURF 0.38D PG64-22	3,309.00	TON		\$	
0130	00342		CL4 ASPH SURF 0.38A PG76-22	12,582.00	TON		\$	
0140	01000		PERFORATED PIPE-4 IN	840.00	LF		\$	
0150	01028		PERF PIPE HEADWALL TY 3-4 IN	20.00	EACH		\$	
0160	01740		CORED HOLE DRAINAGE BOX CON-4 IN	20.00	EACH		\$	
0170	02058		REMOVE PCC PAVEMENT	2,437.00	SQYD		\$	
0180	02101		CEM CONC ENT PAVEMENT-8 IN	100.00	SQYD		\$	
0190	02599		FABRIC-GEOTEXTILE TYPE IV	1,680.00	SQYD		\$	
0200	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0210	02677		ASPHALT PAVE MILLING & TEXTURING	71,963.00	TON		\$	
0220	02696		SHOULDER RUMBLE STRIPS-SAWED	40,284.00	LF		\$	
0230	03240		BASE FAILURE REPAIR	5,861.00	SQYD		\$	
0240	03383		PVC PIPE-4 IN	1,000.00	LF		\$	
0250	20071EC		JOINT ADHESIVE	131,035.00	LF		\$	
0260	21875EN		REFLECTIVE CRACK RELIEF INTERLAYER	2,138.00	TON		\$	
0270	24785EC		FIBER REINFORCEMENT FOR HMA	9,119.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0280	01791		ADJUST MANHOLE FRAME TO GRADE	27.00	EACH		\$	
0290	01810		STANDARD CURB AND GUTTER	7,341.00	LF		\$	
0300	01812		REMOVE CURB AND GUTTER	124.00	LF		\$	
0310	01875		STANDARD HEADER CURB	452.00	LF		\$	
0320	01904		REMOVE CURB	71.00	LF		\$	
0330	01917		STANDARD BARRIER MEDIAN TYPE 2	34.00	SQYD		\$	
0340	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	30.00	EACH		\$	
0350	02014		BARRICADE-TYPE III	20.00	EACH		\$	
0360	02200		ROADWAY EXCAVATION	3,612.00	CUYD		\$	
0370	02230		EMBANKMENT IN PLACE	2,676.00	CUYD		\$	
0380	02351		GUARDRAIL-STEEL W BEAM-S FACE	1,087.50	LF		\$	
0390	02360		GUARDRAIL TERMINAL SECTION NO 1	2.00	EACH		\$	

Report Date 6/3/15

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0400	02367		GUARDRAIL END TREATMENT TYPE 1	5.00	EACH		\$	
0410	02369		GUARDRAIL END TREATMENT TYPE 2A	5.00	EACH		\$	
0420	02381		REMOVE GUARDRAIL	1,397.00	LF		\$	
0430	02391		GUARDRAIL END TREATMENT TYPE 4A	2.00	EACH		\$	
0440	02562		TEMPORARY SIGNS	2,000.00	SQFT		\$	
0450	02575		DITCHING AND SHOULDERING	26,267.00	LF		\$	
0460	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0470	02654		TRUCK MOUNTED ATTENUATOR	2.00	EACH		\$	
0480	02671		PORTABLE CHANGEABLE MESSAGE SIGN	10.00	EACH		\$	
0490	02690		SAFELOADING	33.00	CUYD		\$	
0500	02720		SIDEWALK-4 IN CONCRETE	340.00	SQYD		\$	
0510	02721		REMOVE CONCRETE SIDEWALK	508.00	SQYD		\$	
0520	02726		STAKING	1.00	LS		\$	
0530	02775		ARROW PANEL	4.00	EACH		\$	
0540	03225		TUBULAR MARKERS	2,290.00	EACH		\$	
0550	03426		ADJUST FIRE HYDRANT	3.00	EACH		\$	
0560	04953		TEMP RELOCATION OF SIGNAL HEAD	106.00	EACH		\$	
0570	05950		EROSION CONTROL BLANKET	10,000.00	SQYD		\$	
0580	05990		SODDING	4,770.00	SQYD		\$	
0590	05997		TOPSOIL FURNISHED AND PLACED	400.00	CUYD		\$	
0600	06510		PAVE STRIPING-TEMP PAINT-4 IN	230,000.00	LF		\$	
0610	06514		PAVE STRIPING-PERM PAINT-4 IN	124,292.00	LF		\$	
0620	06515		PAVE STRIPING-PERM PAINT-6 IN	3,970.00	LF		\$	
0630	06517		PAVE STRIPING-PERM PAINT-12 IN	1,689.00	LF		\$	
0640	06549		PAVE STRIPING-TEMP REM TAPE-B	10,000.00	LF		\$	
0650	06550		PAVE STRIPING-TEMP REM TAPE-W	5,000.00	LF		\$	
0660	06551		PAVE STRIPING-TEMP REM TAPE-Y	5,000.00	LF		\$	
0670	06565		PAVE MARKING-THERMO X-WALK-6 IN	4,967.00	LF		\$	
0680	06568		PAVE MARKING-THERMO STOP BAR-24IN	1,561.00	LF		\$	
0690	06573		PAVE MARKING-THERMO STR ARROW	4.00	EACH		\$	
0700	06574		PAVE MARKING-THERMO CURV ARROW	143.00	EACH		\$	
0710	06575		PAVE MARKING-THERMO COMB ARROW	9.00	EACH		\$	
0720	06585		PAVEMENT MARKER TY IVA-MW TEMP	4,340.00	EACH		\$	
0730	10020NS		FUEL ADJUSTMENT	80,544.00	DOLL	\$1.00	\$	\$80,544.00
0740	10030NS		ASPHALT ADJUSTMENT	160,637.00	DOLL	\$1.00	\$	\$160,637.00
0750	20099ES842		PAVE MARK TEMP PAINT STOP BAR	920.00	LF		\$	
0760	20355EC		ADJUST GAS VALVE BOX ONLY	28.00	EACH		\$	
0770	20411ED		LAW ENFORCEMENT OFFICER	1,000.00	HOURL		\$	
0780	20782NS714		PAVE MARKING THERMO-BIKE	1.00	EACH		\$	
0790	20792ND		ADJUST WATER VALVE BOXES	68.00	EACH		\$	
0800	22664EN		WATER BLASTING EXISTING STRIPE	100,000.00	LF		\$	
0810	22680EN		QWICK CURB MEDIAN SEPARATOR	303.00	LF		\$	
0820	23020EN		TRIM AND REMOVE TREES AND BRUSH	2.00	ACRE		\$	
0830	23143ED		KPDES PERMIT AND TEMP EROSION CONTROL	1.00	LS		\$	
0840	23158ES505		DETECTABLE WARNINGS	734.00	SQFT		\$	
0850	23261EC		PAVE MARK-THERMO-X-WALK-24 IN	200.00	LF		\$	
0860	23625EC		PAVE MARK THERMO-6 IN W CAT TRAXX	100.00	LF		\$	
0870	24386EC		PAVE MARKING THERMO-BIKE LANE ARROW	1.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0880	24489EC		INLAID PAVEMENT MARKER INCLUDES 2 MARKERS	1,824.00	EACH		\$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0890	00440		ENTRANCE PIPE-15 IN	46.00	LF		\$	
0900	00462		CULVERT PIPE-18 IN	6.00	LF		\$	
0910	00520		STORM SEWER PIPE-12 IN	6.00	LF		\$	
0920	00521		STORM SEWER PIPE-15 IN	2,761.00	LF		\$	
0930	00522		STORM SEWER PIPE-18 IN	1,060.00	LF		\$	
0940	00524		STORM SEWER PIPE-24 IN	55.00	LF		\$	
0950	00552		STORM SEWER PIPE-18 IN EQUIV	420.00	LF		\$	
0960	00554		STORM SEWER PIPE-24 IN EQUIV	155.00	LF		\$	
0970	00556		STORM SEWER PIPE-30 IN EQUIV	9.00	LF		\$	
0980	01310		REMOVE PIPE	413.00	LF		\$	
0990	01394		METAL END SECTION TY 3-30 IN	1.00	EACH		\$	
1000	01456		CURB BOX INLET TYPE A	18.00	EACH		\$	
1010	01490		DROP BOX INLET TYPE 1	1.00	EACH		\$	
1020	01493		DROP BOX INLET TYPE 2	1.00	EACH		\$	
1030	01544		DROP BOX INLET TYPE 11	1.00	EACH		\$	
1040	01559		DROP BOX INLET TYPE 13G	16.00	EACH		\$	
1050	01568		DROP BOX INLET TYPE 13S	2.00	EACH		\$	
1060	01584		CAP DROP BOX INLET	2.00	EACH		\$	
1070	01585		REMOVE DROP BOX INLET	2.00	EACH		\$	
1080	01642		JUNCTION BOX-18 IN	2.00	EACH		\$	
1090	01709		ADJUST CATCH BASIN	2.00	EACH		\$	
1100	01728		SAFETY BOX INLET-18 IN DBL SDB-5	1.00	EACH		\$	
1110	02157		PAVED DITCH TYPE 1	4.00	SQYD		\$	
1120	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	7,555.00	SQYD	\$2.00	\$	\$15,110.00
1130	02625		REMOVE HEADWALL	6.00	EACH		\$	
1140	03260		CLEAN ROADWAY DRAINS	2.00	EACH		\$	
1150	03262		CLEAN PIPE STRUCTURE	3.00	EACH		\$	
1160	23952EC		DRAINAGE JUNCTION BOX TY B	1.00	EACH		\$	

Section: 0004 - BRIDGE-CULVERT

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1170	02403		REMOVE CONCRETE MASONRY	4.00	CUYD		\$	
1180	08001		STRUCTURE EXCAVATION-COMMON	5.00	CUYD		\$	
1190	08100		CONCRETE-CLASS A	9.20	CUYD		\$	
1200	08150		STEEL REINFORCEMENT	996.00	LB		\$	

Section: 0005 - SIGNALIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1210	04793		CONDUIT-1 1/4 IN	720.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1220	04795		CONDUIT-2 IN	500.00	LF		\$	
1230	04797		CONDUIT-3 IN	2,240.00	LF		\$	
1240	04820		TRENCHING AND BACKFILLING	6,485.00	LF		\$	
1250	04844		CABLE-NO. 14/5C	24,304.00	LF		\$	
1260	04862		CABLE-NO. 4/3C DUCTED	4,000.00	LF		\$	
1270	04885		MESSENGER-10800 LB	1,760.00	LF		\$	
1280	04886		MESSENGER-15400 LB	1,620.00	LF		\$	
1290	04931		INSTALL CONTROLLER TYPE 170	6.00	EACH		\$	
1300	04932		INSTALL STEEL STRAIN POLE	27.00	EACH		\$	
1310	04950		REMOVE SIGNAL EQUIPMENT	12.00	EACH		\$	
1320	20093NS835		INSTALL PEDESTRIAN HEAD-LED	62.00	EACH		\$	
1330	20094ES835		TEMP RELOCATION OF SIGNAL HEAD	236.00	EACH		\$	
1340	20188NS835		INSTALL LED SIGNAL-3 SECTION	78.00	EACH		\$	
1350	20266ES835		INSTALL LED SIGNAL- 4 SECTION	24.00	EACH		\$	
1360	20390NS835		INSTALL COORDINATING UNIT	12.00	EACH		\$	
1370	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	6.00	EACH		\$	
1380	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	7.00	EACH		\$	
1390	21071ND		DATA SURGE DEVICE	12.00	EACH		\$	
1400	21076ND		FIBER TERMINATION RACK	12.00	EACH		\$	
1410	21077ED		FIBER OPTIC CABLE	16,000.00	LF		\$	
1420	21458ND		FIBER TRANSCEIVER SIGN	12.00	EACH		\$	
1430	21543EN		BORE AND JACK CONDUIT	410.00	LF		\$	
1440	23150NN		COMMUNICATION CABLE	240.00	LF		\$	
1450	23157EN		TRAFFIC SIGNAL POLE BASE	128.00	CUYD		\$	
1460	23222EC		INSTALL SIGNAL PEDESTAL	29.00	EACH		\$	
1470	24133EC		INSTALL SIGNAL SENSOR SYSTEM	12.00	EACH		\$	
1480	24795EC		MAKE READY FIBER OPTIC WORK	1.00	LS		\$	

Section: 0006 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1490	04793		CONDUIT-1 1/4 IN	45.00	LF		\$	
1500	04795		CONDUIT-2 IN	10.00	LF		\$	
1510	04820		TRENCHING AND BACKFILLING	45.00	LF		\$	
1520	04829		PIEZOELECTRIC SENSOR	4.00	EACH		\$	
1530	04830		LOOP WIRE	3,000.00	LF		\$	
1540	04895		LOOP SAW SLOT AND FILL	550.00	LF		\$	
1550	20359NN		GALVANIZED STEEL CABINET	1.00	EACH		\$	
1560	20360ES818		WOOD POST	3.00	EACH		\$	
1570	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	1.00	EACH		\$	
1580	20468EC		ELECTRICAL JUNCTION BOX-10 X 8 X 4	1.00	EACH		\$	

Section: 0007 - TRAINEES

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1590	02742		TRAINEE PAYMENT REIMBURSEMENT GROUP 1 OPERATOR	1,600.00	HOUR		\$	

Section: 0008 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1600	02568		MOBILIZATION	1.00	LS		\$	
1610	02569		DEMOBILIZATION	1.00	LS		\$	